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Vol. 18, No. 10 PSYCHOLOGICAL REVIEW PUBLICATIONS October, 1921

# Psychological Bulletin

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PUBLISHED MONTHLY BY THE

PSYCHOLOGICAL REVIEW COMPANY

41 NORTH QUEEN ST., LANCASTER, PA.,

AND PRINCETON, N. J.

Agents: G. E. STECHERT & CO., London (2 Star Yard, Carey St., W. C.); Paris (16, rue de Condé)

Entered as second-class matter January 21, 1904, at the post-office at Lancaster, Pa., under the Act of Congress of March 3, 1879

# Psychological Review Publications

EDITED BY

HOWARD C. WARREN, PRINCETON UNIVERSITY (*Review*)
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THE

# PSYCHOLOGICAL BULLETIN

Vol. 18, No. 10. October, 1921

## 1. GENERAL

528. In Memory of Wilhelm Wundt; by his American Students. *Psychol. Rev.*, 1921, **28**, 153–188.

A series of seventeen papers, prepared by American students of the Leipzig laboratory, dealing with the personality and attainments of Wilhelm Wundt. The symposium contains papers read at the commemorative meeting of the American Psychological Association, Chicago, December 1920, and papers read at a meeting of the University of Iowa Philosophical Club, October, 1920, and also a number of reminiscences from other students of Wundt. Psychologists represented in the symposium are: G. Stanley Hall; J. McKeen Cattell; Edward A. Pace; E. B. Titchener; Frank Angell; Howard C. Warren; James R. Angell; George M. Stratton; G. T. W. Patrick; Charles H. Judd; Wilbur M. Urban; G. A. Tawney; Edward M. Weyer; Walter Dill Scott; Bird T. Baldwin; George F. Arps; Rudolph Pintner.

The series of papers brings into clear relief the personality and genius of Wundt and his influence upon American psychology. It is prefaced by an autographed photo of the master psychologist.

P. T. Young (Illinois)

529. Perry, R. B., The Appeal to Reason. *Philos. Rev.*, 1921, **30**, 131–169.

There is a tendency at present to analyze human nature in order to settle many of the problems of the practical arts, of ethics, of metaphysics and religion. The analysis furnished by traditional psychology has not, however, helped in the solution of these problems and if psychology is to be helpful she "must in some sense again become the science of the soul or of the personality." Her observations on sensory discriminations, reflexes, habit-formation, reaction-times must be regarded as preliminary to the understanding of reason and will. Psychology has rather kept away from these

latter realms because traditional thought has assumed that they should be studied by sentiment rather than by observation of facts. But both psychology and philosophy have lost by this false assumption and both must realize that the more complex levels of human life must be submitted to a naturalistic study.

The general problem of human nature is that of control. Often it has been argued that man in so far as he is really man is controlled by "Reason." But "Reason" has been used to mean something so withdrawn from the concrete facts of human conduct that psychologists failing to find any such factor as a determining cause in human action have denied its rôle and have explained conduct in terms of feeling or emotion, instincts or complexes. But this is to deny facts for when "Reason" and will are construed in terms of observable facts and as they exist amidst the context of nature —they *do* control conduct.

In Behavioristic or Functional Psychology Mr. Perry finds the outlines of a new dynamic view of mind. "Instincts" or "Complexes"—different versions of the same thing—form a unified reaction-system, a general set, or a determining tendency which is able under certain conditions to control the organism, but which when impeded leads to "trial and error." By "trial and error" is meant tentative efforts which will continue until there occurs a reaction by which the impediment is removed. The object exciting the successful response will thereafter be charged with a meaning, or will partially reawaken that same supplementary or completing response. This will render it eligible whenever the same determining tendency is again in force. "When a response occurs on that account, that is, *when an act is performed because in its implicit form it coincides with the unfulfilled phase of a determining tendency*, we may say that it is performed purposively." Belief, too, may be interpreted by the notion of implicit response. "A belief is an implicit response unreservedly set for a specific occasion." The belief is true or false depending upon the presence or absence of the complementary object on the occasion when the belief prepares one for it. An intellectual act is, however, neutral. It regards its object neither with favor nor with disfavor. The same event may both verify my belief and fulfil my interest: but the two aspects are distinguishable and even independent. "In short, belief is belief and interest is interest, and truth is to the one what success is to the other."

Such a conception of "Reason" Mr. Perry believes to be based on observable fact and to be commensurable with the terms of

existing science. Such a view makes reason serve the physical organism. "It provides the organism with stable and reliable beliefs, which the organism both uses and enjoys. To deny such a rôle is to deny the facts. Intelligent performance requires the coöperation of a belief and a determining tendency. Each brings to the act something that the other could not furnish. That these contentions are true is argued in a long and very illuminating analysis of concrete situations in which reason, and especially apologetic reason, is shown at work. Then follows a description of the sound and the unsound mind. The unsound mind is one which, for any one of a number of stated reasons, allows beliefs which are inconsistent with facts to arise in connection with the operation of determining tendencies. In such a mind interest overrides evidence. This happens to some extent in all minds but the sound mind—through openness to (1) appeal to fact, in the sense of accepting experimental facts, (2) evidence of consistency, obtained by thinking over one belief in terms of another, (3) evidence of social confirmation—is able to offset the disturbing effect of interest. The unsound mind on the other hand lacks normal receptivity and modifiability, is "impervious to experience." Such a mind sees only what it wants to see; or tests things merely in terms of its favored beliefs; or fails to check its own responses by the responses of others. But the sound mind is the normal mind and in it we see the large rôle which reason plays in the control of conduct. Reason may be warped by interest or interest by reason but both must be considered in studying human nature.

I. G. Campbell (Wells College)

530. Jacobson, E., The Use of Experimental Psychology in the Practice of Medicine. *J. Am. Med. Ass.*, 1921, 77, 342.

The first step toward giving the physician a groundwork in psychology has been taken in making that subject a pre-medical requirement. Students often complain, and justly, that it does not satisfy their future practical and scientific needs. He gets little beyond sensation, perception, attention, and memory. Kahane complains of the same sort of thing in Germany.

Experimental psychologists have turned their attention to education and other branches to the neglect of medicine. When one recalls the general importance of psychology it is almost amazing that medicine has allowed this neglect.

Psychology's application to medicine is through (1) psychiatry, and (2) general medicine. Psychiatric laboratories have come to

provide a great array of apparatus that was invented in the psychological laboratories. Thorough studies are now possible. They are limited largely to the behavioristic aspects, and we must not look for too much from introspective psychology in the near future. Experimental methods in psychiatry explain, clarify, make precise, and add to what has been found in the clinic.

Psychology in general medical practice has been but little developed. Kraepelin's studies of the effects of drugs on divers mental and physical functions, tests of association, galvanic tests in functional nervous disorders, and experiments on the gastro-intestinal system including internal secretions, cover what has been done. The following important problems should be attacked by the methods of experimental psychology: the effects of suggestion, faith or confidence, emotion, the origin of subjective symptoms, psychological features of work and rest, and their influence on the course of disease, distraction of the attention, mental factors in particular diseases, can functional disturbance lead to organic disorder, a systematic study of mental conditions in individual diseases, psychophysiology of anaesthetics, psychology of prognosis.

(Discussion of this paper by Dr. Coriat, Dr. Ball, Dr. Woodson, Dr. Keller, and Dr. Evans indicated that their conception of psychology was limited largely to suggestion and psycho-analysis.)

R. H. Sylvester (Drake)

531. Laird J., Mental Spaciousness. *Monist*, 1921, 31, 161–182.

Philosophical opinion has always inclined to the view that minds are in time, but not in space. Only recently have modern philosophers other than materialists maintained that minds are spatial in the literal sense, as well as temporal. The assumed spaciousness of the mind is not identical with materiality, and in any case the question has no bearing on the problem of immortality, as many seem to suppose. Analysis of the possibility of mental spaciousness must take account of the correlation of space with time, and their possible fusion in a larger concept. Again we must consider whether unextended properties of extended particles would constitute spatiality. The spatial nature of the brain and nervous system throws no light on the spaciousness of mind, even on the theory of interaction, since all we can observe are spatial effects, not spatial causes. The spaciousness of mind could be maintained on the basis of some form of identity hypothesis; but the latter is untenable. The author examines and rejects Mr.

Alexander's form of the identity hypothesis according to which mind and brain are respectively, private and public experience of the same object. The assertions that "mental enjoyments" as distinct from organic sensations are spatial, and that all thinking is conation and in the final analysis movement, are introspectively unverifiable. Such statements imply incredible properties in simple movements. The author restates the theory of identity between the cognitive and dynamic presence of the mind to its objects, in a more plausible form, but sees no reason for accepting it. Unless direct inspection assures us that minds are spatial, we should not assume it on the ground of general theory. Mr. Laird's personal reasons for rejecting the spatiality of the mind are the apparent impossibility of connecting space with either logic or sentiment.

C. M. Diserens (Cincinnati)

532. Muscio B., Psychology as Behaviorism. *Monist*, 1921, 31, 182–203.

The term science may be applied to "facts" if their accuracy is great though their interconnection is small, or to "facts" whose interconnection is great but whose accuracy is doubtful. This interconnection is expressed in principles, which are of particular importance in contemporary psychology. The attempt to formulate hasty and unphilosophical principles appears in Professor Watson's behaviorism, which regards the subject matter of psychology as behavior, explicable without reference to mental processes. This definition differs entirely from previous definitions which exhibit but verbal differences due to varying stress on some neglected problem or method. These definitions are naturally inadequate, and the Behaviorist definition seeks adequacy by eliminating all mental processes. This does not seriously limit the field of investigation and may serve as method, but when the behaviorist denies mental reality, or identifies mental phenomena with muscular and glandular changes, his view is open to very serious criticism. There is no observable identity between muscular or glandular changes, and mental states. The behaviorists attempt to demonstrate identity of a typical mental phenomenon, thinking, with behavior: (1) by trying to show that movements of speech muscles always accompany silent thinking; and (2) by the theory of substituted reactions or conditional reflexes. The attempt is a failure. The first point if completely proved, could only show concomitance at most.

As to the second point, Professor Watson's theory of the development of thinking in terms of substituted reactions is sketched, and it is recalled that the essence of the matter is the substitution and not the particular muscles involved. Hence, any other muscles than those of speech will do as well, provided that there is muscle movement substitution generated by conditioned reflexes. The author outlines a hypothetical case in which only leg muscles are involved. The same six stages occur as in Professor Watson's scheme, and the end-result should be thinking according to the behaviorist—a reductio ad absurdum. The proposition that behavior is explicable, without reference to mental processes, may be true even if the latter are not reducible to muscular and glandular facts. The position would be that of psycho-physical parallelism, but the behaviorist has contributed no new evidence. In attempting a mechanical explanation of motor habit formation in animals, the behaviorist may eliminate interactionism, and make a genuine contribution. According to the author three positions are open to the behaviorist: (1) He may define and investigate behavior calling the results psychology, without occasion for scientific controversy. (2) He may identify all mental phenomena with behavior, in which event he is in error; or (3) He may accept the hypothesis that behavior is explicable without reference to mental phenomena, but there is no scientific reason for doing so.

C. M. Diserens (Cincinnati)

533. Paulhan, Fr., Sur le psychisme inconscient (suite et fin). *J. de Psychol.*, 1921, **18**, 140–165.

Man must be regarded as an imperfect and evolving system of tendencies and desires. Tendencies are the essential facts of mental life and in their organized aggregate constitute personality. Tendencies pass through a regular evolution, from unconsciousness due to lack of organization, through the stage of systematizing consciousness, and back to unconsciousness characterized by perfect organization. Conscious processes, therefore, form but a small part of the subject matter of psychology. Unconscious processes are of precisely the same nature as conscious processes and are just as distinct from physiological processes. We must admit the existence of unconscious sensibility, ideation, and activity of the same type as corresponding conscious processes. Examples of unconscious intelligence are reflex, automatic, instinctive and so-called intuitive activity. It is even present materialized in our bodily organization.

In fact, every system implies something analogous to knowledge, desire and will, which permits the existence and functioning of the system. Knowledge ranges from the conscious, to the organic and completely unconscious form. Judgment, reasoning, language, memory, imagination, may all belong to the unconscious, which has the same structure and deals with the same materials as the conscious, and is based upon the same tendencies. The unconscious is neither a metaphysical principle, nor a mysterious hidden personality, but is continuous with the life of consciousness and interacts with the latter. Both are aspects of an identical activity. Mind is an organization of tendencies, whose functioning produces all psychic states, whether conscious or unconscious, as phases of the activity. Psychological explanations entirely in terms of conscious facts are as impossible as the explanation of the mechanism of a locomotive, by means of its visible features alone.

C. M. DISERENS (Cincinnati)

534. Sitzungsberichte (Psychologische Gesellschaft zu Berlin). October 22, 1914—December 12, 1918. *Zeit. f. Psychotherapie u. Med. Psychol.*, 1920, **8**, 92–128.

In these thirty-five pages are minutes of the meetings and abstracts of papers and discussions for all meetings of this organization during the War. They are most interesting indeed. In the four years forty-two meetings were held, of which four were purely business meetings. Of the other thirty-eight, eighteen were devoted to subjects such as Art Criticism, Musical Memory, Law in Physics and Psychology, and Problems of Ability in Relation to School Arrangement, which constitute such programs in times of peace. Five were on the Psychology of Suffering, the Psychology and Physiology of Nutrition, and Suicide, these subjects probably being suggested by war conditions but not intentionally connected thereto. Seven dealt with observations and conclusions as to the effects of war, under such topics as War and Art, and Mass Hypnotism in the World War. The other eight meetings were devoted to discussions of means of helping to win the war and of maintaining at first, but later of reconstructing the governmental organization. Among topics discussed were Power through Unity, War and Population, Woman Suffrage, and Organization of the New Germans. These abstracts, the lists of members attending and participating, and the changes from year to year furnish as interesting and wholesome reading concerning the War as one can find anywhere.

R. H. SYLVESTER (Drake)

## 2. NERVOUS SYSTEM

535. HEAD, H., Release of Function in the Nervous System. *Proc. Royal Soc.*, 1921, Series B., **92**, 184–209.

A Croonian lecture. Certain abnormal reactions accompanying lesions in the nervous system are due to removal of the inhibitive function of the higher centers and not to concomitant irritation. This accords with Hughlings Jackson's principle that destructive lesions produce only negative effects and that these negative effects permit the appearance of positive symptoms. According to Dr. Head the positive reactions are due either (1) to the removal through lesions of the dominance of the higher centers, or (2) to the escape from control of the higher centers by the lower centers; this escape may be the result of lack of proper functioning of the dominating centers or of some extraordinary excitation of the lower centers. Escape from control does not involve lesions; the factors may be mental.

J. E. DECAMP (Penn State)

536. WILSON, J. T., The Double Innervation of Striated Muscle. *Brain*, 1921, **44**, 234–246.

The purpose of this article is to give an outline of certain contributions, from the morphological side, to our knowledge of the peripheral motor innervation of striped muscles. The term "double innervation of striped muscles" is ambiguous and unsatisfactory. The term "double motor innervation" is also to some extent unsatisfactory because there are two very different conditions as regards the motor nerve supply, either of which may well enough be brought under the category of a "double motor innervation." The first of these conditions is "plurisegmental innervation" referring to the well-known fact that single muscles are commonly supplied by motor nerve fibers from more than one segmental nerve. The cases of unisegmental nerve supply for one muscle are comparatively few in number. Experimental observations by Agduhr (1916–19), who employed various forms of metallic impregnation to detect and discriminate between the products of post-operative neuraxone degenerations of varying duration demonstrated that many of the individual muscle fibers were certainly innervated by two successive segmental nerves. The second condition of "double motor innervation of striped muscles," an entirely different type, is a double innervation constituted by the presence in the various skeletal

muscles so far examined, of non-myelinated motor fibers which are alleged to be quite independent of the ordinary myelinated motor fibers not only in structural connection, but in source and origin. Various observers have concluded that these accessory nerve fibers are of sympathetic origin. The idea of the existence of an accessory sympathetic source of motor supply is not a novel one. As far back as 1882 Bremer recorded the discovery in the frog and lizard of fine non-medullated nerve fibers entering the motor end plates. Further observations were made by Perroncito (1901), Grabower (1902), Gemelli (1905), Botezat (1906), etc., but it is chiefly through the work of Boeke from 1909 onwards, whose observations bearing upon the appearances met with as the result of experimental nerve degeneration, and who gave expression to the opinion (1913) that the "accessory" system of fibers could hardly be other than sympathetic or autonomic in character, that the view has obtained wide, though by no means universal, acceptance. On the physiological side Dusser de Barenne partially confirms this view. Experimental observations by Agduhr (1919) and others serve to corroborate in all essentials the observations of Boeke on the independent existence of an "accessory" system of fibers. From the result of what appeared to be crucial experiments it is concluded that these accessory fibers are sympathetic in origin and hypolemmal in their mode of termination. These relationships, if admitted, would seem to indicate a centrifugal conduction along these fiber paths of nerve impulses, presumably of motor and possibly of tonic contractile character.

M. S. VITELES (Pennsylvania)

537. WINTREBERT, P., Le Mouvement sans Nerf. *J. de Psychol.*, 1921, **18**, 353–388.

This paper is an experimental study of aneural functions, chiefly the primitive movements of the embryos of a certain cartilaginous fish (*Scylliorhinus canicula*). Primitive reactions occur in protozoa where a nervous system is absent and in embryos of higher organisms before the neural function appears. Embryos present three functional periods of development: (1) the aneural, (2) the neural-aneural, in which functioning of the same organic apparatus results from the association of two modes of activity, and (3) the nervous, where distinct transitory forms of functioning precede those of the adult nervous system. In the embryos of the cartilaginous fish studied, each of the two lateral muscular bands beats in a rhythmic

manner, independently of one another and of a nervous system. The different rhythms of the lateral movements result in a series of attitudes which are repeated cyclically in a constant milieu. The principal signs of the lateral movement are (1) regular rhythm, and (2) equal amplitude at a given moment of development. The autonomy of each muscular bond is indicated by: (1) The isolation of a single movement at the beginning and end of periods of motility. (2) The special rhythm observable in each. (3) The particular reactions determined by change of temperature. That muscular function in the embryo is independent of the nervous system is deducible from these considerations, and is demonstrable by. (1) Tests of irritability showing that only active muscular segments respond to mechanical stimulation which must be direct. (2) The renewal of rhythmic functioning, after the removal of the bulbomedullary centers, either in the aneural or early neural period. (3) The neuro-muscular disjunction caused by curare, or by an increase of temperature. The discovery of muscular and neural dualism shows two independent centers of action at the origin of functioning in the two great systems of relation. A certain unity in mode of activity derives from unity of elemental constitution, but coördination is the work of the nervous system. The nervous system only superposes its activity on existent animal functioning at an advanced embryonic stage. Later, this activity remains subordinated to humoral correlations, or chemical reflexes, which dominate not only morphogenetic processes, but all functional manifestations.

C. M. Diserens (Cincinnati)

## 3. SENSATION AND PERCEPTION

538. Klemm, O., Untersuchungen über die Lokalisation von Schallreizen. 4. Ueber den Einfluss des binauralen Zeitunterschiedes auf die Lokalisation. *Arch. f. d. ges. Psychol.*, 1920, 40, 117–146.

Auditory stimuli from sounders in the Helmholtz penduium are conducted to the observers' ears by means of two telephone receivers. Under these conditions the time required for recognition of chronological order in presentation of stimuli averages less than 2.0$\sigma$. Below this binaural temporal threshold the two excitations fuse into a simple subjective field of hearing. Between the temporal limen and the appearance of this subjective field lies an area where time differences are perceived, although their chronological order

cannot be stated. Localization within the subjective field of hearing may be attributed to apprehension of time differences. In this sense localization is possible when the temporal separation between stimuli is far below the binaural temporal limen. One observer gives discriminations of this sort with the extraordinary time difference of $0.002\sigma$. The phenomenon of auditory localization may be accounted for by difference of phase which, for the observer, amounts to apprehension of temporal differences.

C. C. PRATT (Clark)

539. LIPS, J. E., Die gleichzeitige Vergleichung zweier Strecken mit einer dritten nach dem Augenmass. Zum Drei-Reize-Problem in der Psychophysik. *Arch. f. d. ges. Psychol.*, 1920, 40, 193–267.

Experimental conditions consist in presenting simultaneously two visual extents, $r_1$ and $r_2$, ranging between 160 and 170 mm. in length, and differing in length by 2 mm. or more, followed by a comparison stimulus, $r_3$, ranging between 144 mm. and 176 mm. Observer makes double judgment upon $r_3$ with respect to its relation to $r_1$ and $r_2$. Under these conditions of simultaneous assimilation of one stimulus to two others, the unity of the psychic act is great enough to make no noticeable decrease in accuracy of judgment. In fact, the DL is slightly less in some cases than the DL for single judgment. This method of securing double judgment by simultaneous assimilation gives much finer values than the more usual procedure of obtaining double judgment by means of successive exposures of stimuli.

C. C. PRATT (Clark)

540. HERMANN, F., Der Einfluss des Kontrastes auf den Sukzessivvergleich innerhalb eines festen Reizsystems bei Augenmassversuchen. *Arch. f. d. ges. Psychol.*, 1921, 41, 1–46.

Three groups of visual stimuli, consisting of horizontal lines ranging from 76–124 mm., 106–184 mm., and 126–234 mm., with 2 mm. intervals between comparison stimuli, were interwoven during presentation in such fashion that the psychometric function resulting from a given group would bring to light any contrast effect operative between pairs of stimuli.

Results point to the presence of certain stimulus values within each group of stimuli which set up absolute impressions (absolute estimation error of 0) of "large" or "small." These absolute

impressions tend to carry over from one pair of stimuli to the first member in the next pair, *i.e.*, the first stimulus is the one which receives the effect of contrast, for it is underestimated if it is smaller, and overestimated if it is larger than the preceding absolute impression. With the apperception of each new stimulus, elements of earlier perceptions are called forth from the marginal regions of consciousness so that an absolute impression comes in to determine to varying extent the act of comparison.

C. C. Pratt (Clark)

541. Miller, A., Beiträge zum Problem der Referenzflächen des Himmels und der Gestirne. *Arch. f. d. ges. Psychol.*, 1921, 41, 47–89.

Author reviews the various theories which attempt to account for apparent changes in size of heavenly bodies. It is impossible to escape the conclusion that all the theories rest upon an insufficient body of observed data. Author urges collection of systematic observations made by same method under similar conditions upon same object at same time of day.

C. C. Pratt (Clark)

542. Kirschmann, A., Der Metallglanz und die Farbe der Metalle. *Arch. f. d. ges. Psychol.*, 1921, 41, 90–116.

The essential factor in metallic luster, as well as in luster from non-metallic bodies, is to be sought in the phenomenon of parallax. A metallic surface exhibits luster in those places where part of the light is so reflected that it appears to come from points not on the surface. Most metals are colorless. Some few metals appear red or yellow, while short wave colors are rarely seen in metals except, perhaps, in very low saturation. In most metals the small transparent crystals have a high index of refraction and hence absorb short wave rays while the long rays penetrate farther inward. The depth from which the light is then apparently reflected is uniformly great,—a condition which favors the reds and yellows.

C. C. Pratt (Clark)

543. Fröbes, J., Aus der Vorgeschichte der psychologischen Optik. *Zeits. f. Psychol.*, 1920, 85, 1–36.

Author reviews three early periods of philosophy with respect to their contributions to visual theory. The Greeks were concerned chiefly with attempts to explain the physical attributes of visual

objects in terms of natural elements until Aristotle united the interpretative acumen of Plato with his own wealth of observations into a more genuine physiological account. Ptolemy and Euclid contributed ingenious geometrical explanations of visual phenomena. During the Middle Ages the Arabian physicist and astronomer Alhazen (c. 1000) anticipated much of the present-day psychology of vision and laid the basis for Roger Bacon's treatment of optics.

C. C. PRATT (Clark)

544. JAENSCH, E. R., Zur Methodik experimenteller Untersuchungen an optischen Anschauungsbildern. *Zeits. f. Psychol.*, 1920, 85, 37-82.

Methods and experiments used to determine the laws of visual perception may be adapted with little difficulty to the study of sensory memory imagery. The stereoscopic experiment, *e.g.*, in which two vertical lines, on the right side extending upward from a central point, on the left extending downward from a central point, are perceived binocularly as one vertical line bending slightly toward the right on either side of the central point, will serve very nicely to illustrate the same phenomenon in memory imagery. The vertical line extending upward is first presented to the right eye in stereoscopic vision and then turned through an angle of 180° and presented to the left eye, whereupon the observer, because of the retention of the first presentation in memory imagery, perceives the total line bending slightly to the right on either side of the central point. Such experiments indicate that the perceptual laws of identical visual direction and retinal incongruity are operative in the field of memory imagery. Observers group themselves into two types with respect to clarity and persistence of such imagery. The imagery for those of T-type (tetanus) is relatively stable and little influenced by external distractions, and follows the general laws of association; for B-type (Basedow) the imagery is easily disturbed by extraneous processes and cut across by factors of non-psychological origin.

C. C. PRATT (Clark)

545. SCHUMANN, F., Untersuchungen über die psychologischen Grundprobleme der Tiefenwahrnehmung. 1. Die Repräsentation des leeren Raumes im Bewusstsein. Eine neue Empfindung. *Zeits f. Psychol.*, 1920, 85, 224-244.

Continuing the observations made by Karpinska and E. Jaensch, author attempts to investigate further the impression which derives

from so-called empty space. Experiments with stereoscopic slides reveal the possibility of reducing the impression of empty space to a sensation quality, difficult enough to describe, but likened by observers to glass, gelatine, clear mountain water, transparent ice, etc., more or less compact, condensed, or thin. This impression is a sensory phenomenon *sui generis* whose attributes are no different from those of other visual sensations. It is describable in terms of spatial extent, hue (occasionally, brightness, and even saturation; one cannot speak with assurance regarding its intensity. It is likely that a colorless, transparent, "glassy" sensation of lesser compactness forms the basis for the very indefinite impression which comes from empty space under bright illumination. The existence of this sensation may serve to eliminate certain of the difficulties which block the understanding of spatial tridimensionality.

C. C. PRATT (Clark)

546. De WESENDONK, C. and SCRIPTURE, E. W., Nature of Vowel Sounds. *Nature*, 1921, **107**, 12.

De Wesendonk calls attention to researches of Miller and Stumpf and his own experiments as confirming Helmholtz's theory of vowel sounds as opposed to Scripture's. Scripture interprets Miller's results as favoring his theory.

J. E. DECAMP (Penn State)

547. RAMAN, C. V., and SCRIPTURE, E. W., The Nature of Vowel Sounds. *Nature*, 1921, **107**, 332–333.

Raman questions Scripture's conclusion that inharmonic vibration is produced by exciting strongly damped resonators by periodic impulses. Inharmonics are found in the violin. There is no justification for assuming the presence of inharmonics in voice tones. Scripture replies that the case with the violin sounds is different from that of the vowels; the former are harmonic, the latter partially inharmonic.

J. E. DECAMP (Penn State)

548. SCRIPTURE, E. W., Nature of Vowel Sounds. *Nature*, 1921, **106**, 632–634; 664–666.

Experimental work and conclusions previously reported served as a basis for this brief article. An analysis of the curves of vowel sounds shows that the fundamental tone consists of a series of

puffs and not of periodic vibrations, and that the overtones may be inharmonic as well as harmonic. The pitch of the fundamental is determined by the frequency of the puffs. In ordinary speech, as in singing, the pitch of the voice tone is not constant, but changes from instant to instant. The energy of the laryngeal puffs determines the intensity of the voice tone while the shape of the puff, and not the vocal cavities, determines its musical character. By means of a soft-walled resonator and a puff siren typical vowels were successfully produced. J. E. DeCamp (Penn State)

549. Hartridge, H., The Resonance Theory of Hearing. *Nature*, 1921, **107**, 204.

On alteration of the phase of a continuous musical tone by $\pi$ the sound rapidly wanes, but immediately returns with its former intensity. This is thought to support Helmholtz's theory.

J. E. DeCamp (Penn State)

550. Perrett, W., The Resonance Theory of Hearing. *Nature*, 1921, **107**, 301.

Hartridge's experimental method results in the interruption of the periodicity of the musical note, hence the discontinuity perceived. J. E. DeCamp (Penn State)

551. Hartridge, H., The Resonance Theory of Hearing. *Nature*, 1921, **107**, 394–395.

Perry's displacement hypothesis of the beat appearing when the phase of a note is altered is unacceptable.

J. E. DeCamp (Penn State)

552. Joly, J., A Quantum Theory of Vision. *Nature*, 1921, **106**, 827.

Application is made to contrast and after-images of the theory that visual sensations are due to the "activity of light quanta in liberating electrons from the visual purple." The energy and density or concentration of the stimuli determine respectively hue and tint. J. E. DeCamp (Penn State)

553. Edridge-Green, F. W., The Theory of Vision. *Nature*, 1921, **107**, 361.

Professor Joly's view that the visual purple is the visual substance is found objectionable. It is erroneous to think of the rods

as "percipient" elements; they appear to have a sensitizing function.

J. E. DeCamp (Penn State)

554. Polack, A., Les Effets du Chromatisme de l'Oeil dans la Vision des Couleurs Complexes. *Comp. Rend. Acad. Sci.*, 1921, 172, 1532–1534.

Chromatic aberration of the eye influences the appearance of colors. A properly constructed photographic objective and autochrome plates may be used to produce effects similar to those of the myopic and hypermetropic eye.

J. E. DeCamp (Penn State)

555. Pawlow, J. P., Sur le centre de la faim. *J. de Psychol.*, 1921, 18, 273–281.

Although physiological treatises make no reference to a center of hunger, data acquired in the study of conditioned reflexes point to it as definitely as other evidence indicates the presence of a respiratory center. The periodical direction of the whole muscular system toward nutrition, with parallel glandular activity suggests a study based on movements, but the salivary glands yield the surest information on the functions of the alimentary center. The analogy between the respiratory and alimentary centers points to a stimulus of an automatic order, such as the chemical composition of the blood, a view confirmed by the retention of appetite after the nerves from the alimentary canal are cut. This automatic excitant commonly exists in a latent state, due to interior inhibition, a factor brought out by the curious phenomena of retarded conditioned reflexes. Interior inhibition may in turn be inhibited by unaccustomed excitants, when hunger reactions at once appear. Experiments on partially decerebrated dogs show an oscillation in the quantity of salivary secretion, during the extended agitation following slight feeding. This is usually held to indicate antagonistic factors. In analogy with the respiratory center, whose functions are modified by sectioning the vagi, the alimentary center is affected by the nerves of taste, excitation, followed by inhibition occurring in the course of a series of slight feedings. That inhibition is due to the presence of food in the stomach is shown by absence of inhibition in a dog with an œsophageal fistula. Complete analogy exists between the respiratory and alimentary centers. The latter must be understood, in a broad way, as a part of the nervous system

which governs the chemical equilibrium of the body. The alimentary center must be very complex and can not be definitely localized at present. It is composed of several distinct groups of neurons, occupying different levels of the nervous system.

C. M. DISERENS (Cincinnati)

556. FLUEGEL, J. C., On Local Fatigue in the Auditory System. *Brit. J. of Psychol.*, 1920, 11, 105–134.

The process of binaural localization of a tone is frequently subject to fatigue when one ear has been previously stimulated. The fatigue manifests itself in an apparent displacement of the tone towards the unfatigued side. Its effects can be compensated by causing the sound affecting the fatigued side to arrive at an earlier phase than the sound affecting the unfatigued side. During the process of recuperation the apparent displacement of the sound diminishes—as a rule gradually—and finally disappears. This fatigue is manifested to a different extent in different individuals, and sometimes even in the two ears of the same individual. This fatigue exhibits usually some dependence on the duration of the fatigue-producing stimulus. There would appear to be a point however (varying with different individuals) beyond which continuation of the fatigue-producing stimulus causes no corresponding increase of the fatigue manifestations. The fatigue is largely—perhaps quite—independent of the pitch and intensity of the fatigue-producing stimulus. The fatigue produced by a tone of one pitch is transferred to the perception of a tone of another pitch. The fatigue is unaffected by distraction, and occurs even when the fatigue-producing stimulus is rendered inaudible by a simultaneous louder sound affecting both ears. This fatigue does not produce any appreciable effect upon localization during continuous binaural hearing, even in the case of individuals who are more fatigable on one side than on the other side. Uniaural stimulation produces a second kind of fatigue, which manifests itself in diminished intensity of the auditory sensation produced by stimulation of the fatigued ear, so that after uniaural stimulation a tone of continuously diminishing intensity will become inaudible on the fatigued side at an earlier moment than on the unfatigued side, though before fatigue it had become inaudible on both sides at the same moment. This fatigue is of brief duration (seldom if ever more than thirty seconds) and would seem to decline rapidly as soon as the fatiguing stimulus is removed. This fatigue is experienced by all observers

to approximately the same extent. It is largely independent of the duration, pitch or loudness of the fatiguing tone. Fatigue produced by a tone of one pitch does not affect the perception of a tone of different pitch, except within limits that correspond roughly to the limits of pitch discrimination. No manifestations of this fatigue are observed when the fatiguing tone is rendered inaudible by a louder stimulus affecting both ears.

H. D. KITSON (Indiana)

557. WATT, H. J., A Theory of Binaural Hearing. *Brit. J. of Psychol.*, 1920, 11, 162–171.

A summarization of recent findings that support the writer's theory previously enunciated in "*The Psychology of Sound*" (1917) that a small number of nerve fibers connect the receptor with the cortex, in which arrangement each receptive element is unambiguously related with a central spot and so receives an individual proportional attribute. Of the two dimensions (length and breadth) in the anatomical area involved, the binaural locational area is concerned primarily with the narrow transverse aspect alone. Each terminal, of the two or three in a transverse section, gives centrally a little area of excitation most intense at the center, decreasing gradually to a subliminal margin. Though each terminal in a section differs in its sensation from its neighboring spots, the transverse row yields on full stimulation a single graded mound of excitation. The theory of binaural hearing now assumes that these combined uniaural mounds again combine by overlapping whenever the two ears are stimulated simultaneously at these transverse points by any sound. The main binaural functions may be deduced from suitable variation of the relative intensities of the uniaural components and their summation.

The recent experimental work of Klemm strikingly confirms this view; showing that a binaural sound has a greater volume than the uniaural; that the diotic sound is much louder than the monotic; and that when time intervals elapse between excitation of the two ears, the earlier ear gives the maximum at first to one side while the later ear pulls it over to the other.

H. D. KITSON (Indiana)

558. BOURDON, E., Theorie de la perception. *J. de Psychol.*, 1921, 18, 177–209.

Perception is defined as a complex of sensation associated with other psychological phenomena. It is distinguished by its strength

from representations or ideas which are relatively weak psychic states, although the distinction is not absolute. Perception is also thought of as exterior, *i.e.*, it is a perception of external objects. Existing theories of perception err, in regarding the objects of perception as already given, and lead to the meaningless question of the exteriorization or objectivation of sensations. In reality no judgment of exteriorization can be observed, and the question can not arise except for certain sensations such as those of smell, of which the spatial character is perhaps not primitive. The internal or external character of objects is a spatial character dependent upon relation to other objects or to ourselves. No objects are internal or external per se. The general influences determining our perceptions are: (1) Association of sensations. (2) The isolation of certain groups effected by attention. (3) The evocation by certain sensations, of representations or related mental states. (4) The identification of perceptions composed of different sensations, when they refer to the same object. (5) The predominance of certain sensations or representations in perceptive complexes. (6) The constitution of stable perceptions relative to determined objects. M. Bourdon discusses each of these influences in detail, and shows that they vary from individual to individual. He then takes up in succession; the perception of space in general, visual space including magnitude, form, position, and direction, the visual perception of movement, and auditory space.

Theories of the development of space perception are either: (1) nativistic, represented by James, Hering, Stumpf and Ebbinghaus, or (2) empiristic or genetic, defended, in various forms, by J. S. Mill, Bain, Spencer, Helmholtz, Taine and Wundt. The empiristic doctrines are open to much criticism, and nativism in a modified form admitting the perfection of innate perception by experience, seems the best theory of spatial perception. All sensations, however, are not primitively extended as James thought, but on the other hand every sensation can be unextended. Perception of extension depends on the presence of an extended stimulus, simultaneously evoking several sensations with different local signs. Indeed the only spatial property which is inherent in every sensation is that of possessing a local sign. Progress in the study of the origin of spatiality resulted, when particular kinds of space were thought of instead of space in general. Future progress will consist in considering separately not only depth, but also form, direction, etc.

The doctrine of spatial perception, which can be defended most easily today, is that the tactile space of the normal person is gradually supplanted by visual space, which even comes to dominate tactile perception. This view is supported by the experiments of Stratton on the effects of new visual localizations, as well as by the common experience of localizing sensations of contact, *e.g.*, of a cane, at the point where we see the contact take place. Lachelier's doctrine that only visual sensations are extended is criticized as untenable.

C. M. Diserens (Cincinnati)

## 4. FEELING AND EMOTION

559. Russell, F. T., A Poet's Portrayal of Emotion. *Psychol. Rev.*, 1921, **28**, 222–238.

The author presents a description of disgust, envy, fear, anger, grief, joy, pity, shame, adoration—illustrated with character pictures and quotations from the works of the philosopher-poet, Robert Browning.

P. T. Young (Illinois)

560. Grossart, F., Das tachistoskopische Verlesen unter besonderer Berücksichtigung des Einflusses von Gefühlen und der Frage des objektiven und subjektiven Typus. *Arch. f. d. ges. Psychol.*, 1921, **41**, 119–200.

Analysis of the processes entering into the recognition of emotionally toned words reveals the operation of factors far more decisive than the mere occasional slips in sensory apperception. The mood of the observer, his dexterity of anticipation and expectation, his own particular egocentric ideas and habits of interpretation and belief, and the like play a leading rôle in recognition. Of greatest significance is the fact that with many observers recognition runs a course which is predetermined by feeling and desire. Observers may be divided into two main groups—subjective and objective. The former, because of an urge for correct recognition, is driven by egocentric tendencies of expectation more than the latter group which seeks to envisage the object in all its details before coming to a judgment. The objective type is more passive, the subjective type much more active.

C. C. Pratt (Clark)

## 5. MOTOR PHENOMENA AND ACTION

561. RABAUD, E., Contribution à l'etude de l'instinct: comportement de quelques araignées. *J. de psychol.*, 1921, 18, 171–176.

This paper is an analysis of the variations of instinct observable in certain large spiders (*Argiope Brunneichi* and *Araneus diadematus*). Certain observers have emphasized the apparent intelligence or implicit science displayed by wasps and spiders in capturing and killing their prey, but such anthromorphic interpretations are unnecessary. Stinging and biting are pure reflexes. In the spiders studied by the author variations of predatory behavior depend upon the intensity of vibrations imparted to the web and the possibilities of manipulation afforded by the victim's body, and not upon motives of fear and prudence as Fabre supposed. There is no rigid sequence in the stages of capture. Biting may precede envelopment, or the reverse; or one stage may be absent. In all cases instinct is determined by exterior conditions and varies with them. The spider simply exhibits an elaborate chain of reflexes in which each reflex changes the relation of the animal to the environment, thus releasing a new reflex. The result is not always adaptive, but often a waste of energy. The order of connection among the reflexes is not constant, but is a function of external conditions. Such a type of behavior is neither instinct nor intelligence in the strict sense, indicating that our notions of these terms require modification.

C. M. DISERENS (Cincinnati)

562. DELACROIX H., De l'automatisme dans l'imitation. *J. de Psychol.*, 1921, 18, 97–139.

In the analysis of imitation three species may be distinguished, viz., (1) Conscious voluntary imitation, in which judgment of the necessity of imitating is explicit. (2) An inferior form of the preceding, in which conscious judgment is implicit, and (3) Automatic, reflex or mechanical imitation, where no act of judgment occurs. An analysis of mechanical imitation or automatism is the main object of this essay. Imitation can not be explained in terms of sympathy or imagination, since the latter are more complex phenomena, but must be defined with reference to the reactions involved in perception, from which imitation starts. The reactions of perception are: (1) constitutive or constructive move-

ments, and (2) movements of response. Automatic imitation is a prolongation of the constitutive movements of perception, and is usually inhibited by responses and representations. In order that automatism may develop the attitude of response must be inhibited; *i.e.*, we imitate when perception is arrested in its development. Hence reflex mimicry appears in the normal, only under conditions tending to distract attention and paralyze the active functions.

The attempt to explain imitation by kinesthetic images fails, as does the theory of the associationists even when supplemented by genetic considerations. The author analyzes automatic imitation, in adult human beings, animals, and children, particularly as regards the acquisition of language. Mechanical imitation is rare in adults. Responses which resemble it are due to: obscure reason for imitation, power of motor representation of objects, vague consent and participation of subject, predisposition, and coincidence of stimuli in several individuals. Automatic imitation is increased by the action of masses which (1) removes personal control and customary restraint, (2) promotes expectancy and confused emotivity, and (3) leads to common response. In the abnormal, imitation appears with other ideomotor symptoms, but the forms of imitation are not symptomatic of particular psychoses. Imitation in animals appears to be connected with (1) instincts predisposing to certain types of behavior, (2) length of the period of infancy and (3) the social life of the species. Automatism in animals is relatively rare, but appears under the same conditions as in human beings. In the child, imitation, first of self and then of others, functions in the differentiation and development of perception and language. Motor analysis and imitation permit the constitution of words, as tactile movements allow that of objects.

C. M. Diserens (Cincinnati)

563. Dumas, G., Les Mouvements volontaires. *J. de Psychol.*, 1921, 18, 320–334.

The mechanism of voluntary movements is a difficult problem to which common sense gives a tautological answer. In an empirical study of the problem two common errors must be avoided, viz.: that we can will the contraction of particular muscles, and that voluntary innervation is concerned with some determined nerve. Voluntary responses are synthetic and we only will these reactions in their final result, by means of a neuro-muscular mechanism of

which we are unconscious. As Bain and Spencer have indicated, the extent of the domain of voluntary movements depends on the independence, specialization and possible associations of motor mechanisms. The experiments of neurologists show the importance of peripheral sensations in determining voluntary movement. Such sensations suffice to explain coördination and control, but physiologists themselves (Soury, Gley, etc.) admit in addition, the presence of an image or mental representation. This view was elaborated by A. Bain, while it was analyzed and rejected by Renouvier, who confounds will with reflection. James following Renouvier, assimilated volition to belief. M. Dumas is unable to discover elements of reflection or belief in any characteristic act of volition, and denies that there are two kinds of distinct and superposed activity, one based on images and affective states, the other, voluntary activity in the proper sense, founded on control of motor representations. All that need be assumed is the presence of a relatively independent neuro-muscular mechanism presenting motor tendencies, associated by experience with the image of an act to be performed.

The small expenditure of energy involved in voluntary movements as compared with the movements of passion, is due to acquired automatism of mechanisms, which also explains the apparent disproportion of cause to effect. The illusion of will as a power of initiating activity, is due to this disproportion. It is significant that the sense of volition is absent: (1) in purely automatic movements, (2) in movements connected with violent passion, (3) in muscular effort; *i.e.*, in all cases where disproportion of cause and effect is unobservable.

C. M. Diserens (Cincinnati)

## 6. ATTENTION, MEMORY AND THOUGHT

564. Crile, G. W., A Suggestion as to the Mechanism of Memory. *J. of Comp. Psychol.*, 1921, 1, 201–211.

In a paper which virtually resuscitates the *tabula rasa* doctrine (of Locke, 1690) of imperishable memory, Crile offers a physiochemical hypothesis of retention. He conceives that the cell-body of a neuron acts as a generator and fabricator of energy; and that conduction and conservation are effected by the white, fibrous, matter (hence, by the dendrites, the neuropile, and especially the axone). His argument is as follows: the white, fibrous, matter

has been found to contain linolinic acid, which is akin to linseed oil—and the latter has been shown to conserve impressions of sunlight—therefore, the linolinic acid of the white, fibrous, matter in the nervous system must cause it to conserve the effects of stimuli and of stimulation. In presenting his hypothesis, he uses that unfortunate analogy of the phonograph matrix, and falls into the error of the association school, and of the Freudian school as well, if not of the old faculty psychologists too, namely that there is *an unfading, imperishable memory*. One cannot read his discussion and not be reminded of Dunlap's recent characterization of behaviorism and Freudianism as offspring of associationism.

His real contribution lies in an attempt to explain the function and the evolution of the crossings, decussations, of tracts to be found in the commissures and in the *corpus callosum*. Having quite rightly rejected economy, blood-supply, and left-right and right-left coördination as reasons for the survival of decussations, he believes that the decussations are for purposes of enlarging the magnetic field of an impulse in a given tract—and the stimulations, impressions, from either side of the body are thus doubled and sent on to the brain in a double fashion and impressions are thereby retained in a binary manner.

The hypothesis can be added to the hypotheses advanced by Sherrington, Verworn, Piéron, and Robertson, and to the hypotheses resulting from Hodge's experimental work on the cell-body.

The reviewer would point out that Bell's law, that motor neurons issue from the anterior or ventral horns of the cord, seems to be ignored in the drawing on page 207 of the article.

H. R. Crosland (Oregon)

565. Ach, N., Zur Psychologie der Amputierten. Ein Beitrag zur praktischen Psychologie. *Arch. f. d. ges. Psychol.*, 1920, 40, 89–116.

The mental state of those for whom an amputation of some part of the body, like the arm or leg, has been necessary is one which requires the careful attention of the applied psychologist. To guard against too great depression it is often advisable to bring such patients into company with others whose condition is still worse, but who, by dint of their will to work, have succeeded in rising superior to their handicaps. It has been found that the methods of treatment must vary according as the patients are choleric, sanguine, phlegmatic, or melancholic in type. Psychic

muscle exercise is the first and most important form of treatment. In this procedure the patients are requested to move the amputated member which, of course, can only happen in imaginal terms. But the innervation of the stump muscles which such a request initiates forestalls possible atrophy prior to the selection and adjustment of the prosthesis. When the artificial member is in place these exercises are continued until the patient is able to take up an occupation. If a right-handed patient has lost his right arm it is not always wise to break him into left-handed habits, especially if he be middle aged; for the cortex has such a strong right-handed *Einstellung* that the patient is often able to manipulate a prosthesis more efficiently than the left hand, and with much less psychic disturbance. With respect to the will to work patients seem to divide into three groups: those whom pride or family obligations have spurred on to mastery over their ill fate; those for whom the shock of discouragement has been so great that help is of no avail; and a larger middle group who can eventually profit by expert guidance and instruction. For the training of this latter group all the data concerning personality, will, and temperament, together with the psychological requirements of various occupations, are of the utmost significance.

C. C. PRATT (Clark)

566. PERRIN, F. A. C., Conscious Analysis *versus* Habit Hierarchies. *J. of Comp. Psychol.*, 1921, 1, 287–308.

In a paper which quotes no introspections, includes no tables, and contains no curves, Perrin has sought to establish that: (1) The alleged heightened initial consciousness in a series of learning acts in the human adult subject has been overstressed; (2) whatever initial consciousness does occur has been erroneously called cognitive instead of emotional; (3) conscious analysis follows, rather than precedes, the acts of learning; (4) conscious analysis by no means follows consistently the retention and the selection of new and difficult coördinations; and (5) "reasons exist for" asserting that the learning process "is necessarily an unconscious process."

Finally, by rejecting the hypotheses of recency, pleasure-displeasure (glandular), and conscious discovery and vivifying of helpful items in an act, to explain the gradual elimination of useless movements and the acquisition of correct reactions, he accepts the frequency hypothesis and tries to substantiate it by his own older doctrine of hierarchies of habits, some general and some specific.

Throughout the paper, one gets the impression that he is hitching his wagon to the behavioristic horse.

Three, of seventeen, tests are reported: the Bogardus fatigue test, a set of balancing tests, and a maze-groove-tracing test. The subjects, 100 in number, were "untrained" in introspective technique.

A special feature of his paper is what the reviewer regards as an innovation in psychological dialectic. That some of his subjects could not introspect but could make rapid progress in the tests, and that others of his subjects could do some introspecting but could make only slow progress in the tests, he regards as extremely important for his conclusion that consciousness played an ineffective rôle in the learning in his various tests. Yet he admits that his subjects were naïve introspectors. The reviewer knows of no other such line of argument anywhere else in the literature.

H. R. CROSLAND (Oregon)

567. KATZ, D., Psychologische Versuche mit Amputierten. *Zeits. f. Psychol.*, 1920, 85, 83–117.

Patients who have undergone an amputation of a leg or an arm can hardly be considered as subject to illusion when they report an awareness of the lost member as though it were present, for the illusion is enhanced by an increased effort of attention. The experience is more akin to hallucination, although the usual pathological conditions in the brain for hallucinations are absent. The illusion of the phantom limb sets in soon after amputation, with a vividness greater than normal and continues for an indefinite period (one case of 56 years cited by Abbatucci). The two-point limen and the RL for pressure on the stump are smaller than for corresponding areas on the unaffected member; localization and reaction times, however, are less accurate and slightly slower. The DL for lifted weights is a bit smaller with the prosthesis. Further experiments with lifted weights after Sauerbruch's operation led to the discovery that sensations from the joints do not enter into the total impression of weight.

C. C. PRATT (Clark)

568. KROH, O., Eidetiker unter deutschen Dichtern. Ein Beitrag zum Problem des dichterischen Schaffens. *Zeits. f. Psychol.*, 1920, 85, 118–162.

Through an analysis of original compositions and a survey of various biographical material the author is able to give an account

of the remarkably vivid sensory memory imagery of poets like Ludwig, Tieck, Hoffman, von Scheffel, and Goethe.

C. C. PRATT (Clark)

569. RUBIN, E., Vorteile der Zweckbetrachtung für die Erkenntnis. *Zeits. f. Psychol.*, 1920, 85, 210–223.

On the basis of observations on his own procedure during the investigation into the operation of a new piece of apparatus, author gives an account of the manner in which various mental processes out of a total situation work together toward a definite goal under the influence of a selective *Aufgabe*.

C. C. PRATT (Clark)

570. HARRIS, D. F., A Case of Colored Thinking with Thought-forms and Linked Sensations. *Nature*, 1921, 106, 725–726.

Colored thinking, "the visualizing of concepts as colored," must be distinguished from synæsthesia. The case reported shows psychochromes, synæsthesias, and psychograms. The letters of the alphabet are thought of in terms of colors; tastes, odors and other sensations are colored; numerals, the letters of the alphabet, months, days of the week, are represented spatially. The case is not clearly hereditary.

J. E. DECAMP (Penn State)

571. PERRYCOST, F. H., Colored Thinking. *Nature*, 1921, 106, 829–830.

Note on a case having colored numbers and colored tastes.

J. E. DECAMP (Penn State)

572. REVAULT D'ALLONNES, G., Le mécanisme de la pensée. Critique de Taine. *J. de Psychol.*, 1921, 18, 282–299.

This essay is a constructive criticism of Taine's fundamental positions in psychology. The originality, rigorous logic, and interpretative value of Taine's work are recognized, but the author also finds a certain incoherence based on the presence of two contradictory and irreconcilable ideas, viz.: imaginal nominalism, and Mental Schematism. Passages are cited showing an implicit recognition of the dominant rôle of mental schemata, but Taine makes little use of the conception, rejecting it in favor of developed images as a means of explaining processes of thought. Taine unconsciously gives excellent descriptions of conceptual schemata in his effort to

prove their non-existence. The theory of imaginal nominalism requires that singular images—rich and clearcut—should be evoked by *names*. Hence mental schemata are treated as useless. The schema reappears, however, in the tendency which Taine assumes in explaining how names evoke images. Thus Taine is forced to fall back upon schemata under another name. The importance of schemata is further demonstrated by the facts that: (1) They greatly outnumber developed images, and (2) that images, however complete, are still schemata in the sense that further enrichment is always possible. Taine's imaginal nominalism must be replaced by conceptual schematism—a change easily reconcilable with the doctrine of "antagonistic reductors," which is of such value in explaining the opposition of subject and object. The acceptance of schematism leaves Taine's genuine contribution unaltered. Aesthetic education largely consists in replacing detailed and partly irrelevant imagery by appropriate schemata. The author concludes that the substitution of schemata for images will dispell most of the difficulties involved in the study of intelligence.

C. M. Diserens (Cincinnati)

573. Janet, P., Les oscillations de l'activité mentale. *J. de Psychol.*, 1921, 18, 140–145.

Professor Janet summarizes two courses given at the College of France in 1918–19 and 1919–20. The former includes: (1) A study of transition phenomena by which mental activity passes from one degree to another; principally, crises and attacks characterized by forms of motor and verbal disturbance. (2) A study of circumstances which seem to determine the appearance of these changes, including both physiological and psychological factors, and (3) the interpretation of the emotions, confining the term to emotion-shock. The latter is characterized by disorder and irregularity of reaction, and is interpreted from the standpoint of energy expenditure. In the course of 1919–20, the oscillations of mental activity are studied from a different standpoint. The consideration of energies involved in the previous course is supplemented by a study of the duration, succession and repetition of mental oscillations, *i.e.*, their evolution in time. The variations in the character of mental oscillations, according to the kind of abnormality involved, are pointed out.

C. M. Diserens (Cincinnati)

574. GILLES, A., Sur le phénomène du déja-vu. *J. de Psychol.*, 1921, 18, 166–169.

The phenomenon of false recognition is fairly common and has invited considerable mystical speculation. Analysis, however, may reduce it within the limits of a hypothesis acceptable to psychologists. The hypothesis that false recognition is based on an identical dream involves improbable coincidences. A more plausible view is that a real situation may suggest a reconstruction of vague dream memories, which creates the illusion of false recognition. A more general explanation is that the latter is due to a disagreement between two parallel modes of mental activity, the one conscious and the other subconscious. Subconscious sensory and affective impressions may precede conscious attention, which once attracted, discovers familiar images, and localizes them as conscious experiences of a distant past. Localization in the past is due to a difference in the mechanisms of the conscious and the subconscious, involving different measures of time.

C. M. DISERENS (Cincinnati)

575. CLAPARÈDE, E., L'orientation Lointaine. *J. de Psychol.*, 1921, 18, 210–228.

The problem of distant orientation, or the ability to pursue a goal which cannot be directly perceived by the animal seeking it, has aroused the curiosity of many investigators, who have usually sought to explain it in terms of some instinct equally in need of explanation. The confusion which exists, respecting this problem, is due to: an insufficient analysis of the situation, the attempt to furnish a universal solution, contradictory observations, and conflicting theories. Two principal questions must be recognized, viz., What are the internal and external stimuli to reactions of orientation? and second, Is the association between these stimuli and reactions native or acquired? In any study of orientation six possibilities must be considered.

The principal theories of orientation are: (1) Magnetic sense; (2) perception of atmospheric currents or a special nasal sense; (3) direction by the sun or light; (4) tropism or attraction of a purely reflex nature; (5) kinæsthetic memory or something similar; (6) topographic memory; (7) direct perception at great distances or telepathy; (8) intelligence; (9) hereditary topographic memory; (10) some kind of special sense of direction. Each of these are discussed critically.

The method of investigating distant orientation should be experimental and analytic, with the aid at times of the pathological method. The genetic and comparative methods are of especial use in studying distant orientation in man. Sources of error are: Chance, errors of interpretation, acceptance of unreliable data, failure to record negative instances.

The mechanism of distant orientation in man is as obscure as that in animals. The superior ability of savages seems to rule out the theory of indications or "points de repère." Whether the explanation is topographic memory or some kind of interior intuition as the savages claim is uncertain. Experiments seem to show two types of human orientation—egocentric and domocentric—according to the point of reference. Cases of reversed or confused orientation remain unexplained. The conclusion is that the problem of orientation is very complex and still very far from being cleared up.

C. M. Diserens (Cincinnati)

576. Creighton, J. E., Reason and Feeling. *Philos. Rev.*, 1921, 30, 465–481.

This article of great philosophical value has in it much of psychological interest. To abstract it would be to mutilate it but some points of interest may be noted.

The common characterization of reason as a faculty of mind which deals with general concepts and rules and which must keep itself entirely unmixed with feeling is false. That Truth can be gained through dispassionate reason is an unwarranted hope. A grasp of Truth involves an appreciation of values and this can only be had if there is some feeling present. But neither feeling nor reason—in the usual narrow sense—can when alone interpret experience. Only reason in the larger sense can do this. Reason really means the total life of mind. The process of reason is that which is being realized in the concrete life of mind. Reason is "not a matter of the manipulation of rules" but is "a life that is carried forward by the progressive development of principles." "Reason is, on one side, just the transforming power of the mind in action, the striving towards a more systematic and significant world of experience, and on the other hand, the power of conserving as elements of that world the results already attained."

The logic of this larger reason is not that of formal logic. This latter has its place, but its work is only preliminary and must not be taken as the final goal. The more complete logic may be said

to be based on Aristotle's doctrine that the real is the individual. Not the individual as mere particular, but as universal and permanent; as possessing "matter" and "form." With such an individual it is possible to hold converse, "to experience it, not merely to think it contemplatively 'in idea'; but to perceive it, hate it, love it, hold practical relations with it." In applying this logic to the comprehension of the mind, "it recognizes here the concrete unity of the manifold, and attempts to follow the actual process of its development and to understand how the various functions and aspects—perception, memory and imagination, as well as feeling and will—are included within the developing reason of the individual." According to this logic, nothing is regarded as a fixed element which remains unchanged at every level. Feeling and memory, for example, do not remain constant but are different at different levels of experience. That memory changes is often remarked but that feeling does so is often overlooked. "In popular theory, feeling is assumed to persist unchanged throughout the course of experience, its character being unaffected by the context in which it appears. As mere isolated bodily feeling, it is opposed as something subjective and particular to the objective deliverances of the logical consciousness, and as no distinctions in the organization of feeling are recognized, the conclusion seems to follow directly that the only road to rationality is through its elimination or suppression." But an appeal to the actual movement of experience shows that feeling changes according to the total system in which it participates. "The mind is a whole, or a progressive movement toward a whole, and the further this movement of development advances, the more completely do thought and feeling interpenetrate." At the lower level of experience "feeling appears as something isolated and opaque, as the passive accompaniment of mere bodily sensations"; but "when the mind is at its full stretch the feelings are interfused with the content in the consciousness of power and achievement." In the feeling experience that belongs to the level of systematic thought we have an experience "not rightly described as a subjective reaction, an isolated 'state of consciousness.' It is a phase of the integral experience, and partakes directly in the universal and objective nature of that experience." The distinction of these two levels may be illustrated by a comparison of the experiences that Butler differentiated as "sudden anger" and "deliberate resentment." The reviewer is reminded of the distinction made by Shand, McDougall and others between the primary emotions and the sentiments.

Professor Creighton affirms that this application of "the logic of the concrete mind" to the feelings is not a new doctrine. "Its fundamental principles have guided the whole development of philosophy." As upholders of this view Plato, Aristotle, Spinoza, Kant and Hegel are particularly mentioned.

I. G. CAMPBELL (Wells College)

577. GREGORY, J. C., Thought and Mental Image. Art and Imitation; a Parallel. *Monist*, 1921, 31, 420–436.

A natural and perhaps inevitable mental tendency has led to the identification of both art and thought with the mere reproductive elements which serve as their instruments. The imitative theory of art has constantly confused artistic conception with the picture which embodies it while the mental image has been confounded with the process of thinking, which it subserves. Art however, is more than imitation, because memory and imagination on which it is founded, are more than mere methods of mental duplication. The essential function of imagination is not picturing but the use of images as instruments of thought. As such, images may cease to be directly representative or imitative and become purely symbolic. The fact that rich mental imagery seems to hinder the formation of general ideas, and that images tend to drop away in course of mental development, warns us against any identification of the image with thought in its essential nature.

C. M. DISERENS (Cincinnati)

578. DEMOS, R., Memory as Knowledge of the Past. *Monist*, 1921, 31, 397–408.

This paper is a discussion of memory from the standpoint of epistemology. The sense of the term memory is limited to such cognitive facts as are a recovery of a perceptual impression, in other words, to knowledge of the physical world by means of an image. A brief psychological analysis shows that memory consists on the one hand, of a process of ideation, with an image as its nucleus, and on the other, of a judgment to the effect that the image is a picture of a past event already perceived by the subject. As a cognitive fact, memory is not knowledge of the past by acquaintance since: (1) Image and object are not identical. (2) The date of memory and imagination may be the same, and, (3) Memory is fallible while acquaintance does not admit of error. Memory is knowledge of the past by description, viz., as the object pictured

by the image in the mind. The conclusion is that memory is a type of representative knowledge, the image a pictorial symbol of fact, and judgment on the basis of memory an interpretation of symbolic meaning.

C. M. DISERENS (Cincinnati)

579. PICARD, M., The Production of Psychic States. *Monist*, 1921, 31, 321–336.

The author takes a functional view of neural activity, assuming that cognitive and feeling states are coördinate while their neural bases are not. Hence it is more profitable to study the conditions of production of feeling and cognition, than to inquire into their neural bases. The origin of psychic states is related to their survival or instrumental value, which must not be confused with individual or personal value. Psychic origins are best explained by psycho-physical monism. The theory is advanced that the neural activities which function consciously are wider than those which produce cognitive elements. The same functional activities are never the bases of feeling and cognition at once. An emotion may represent (1) the unattended idea, when two opposed ideas fluctuate. (2) Associated ideas below the ideational level, or, (3) initial consciousness of an instinctive tendency. This theory: (1) Reconciles orthodox psychology and psychoanalysis. (2) Justifies education of the conscience and (3) shows how religious emotion may open up wider fields of experience than intellection can attain.

C. M. DISERENS (Cincinnati)

580. POYER, G., Activité mentale, travail intellectuel et fatigue. *J. de Psychol.*, 1921, 18, 300–319.

The author after pointing out that mental functions really form an indivisible whole, discusses the nature, criteria, and laws of genuine mental activity. Uncontrolled automatism, general intellectual type, and the sense of effort, condition mental activity, which varies in value, according to its social consequences. The latest contribution to the subject is Foucault's experimental determination of the most general laws of mental activity for any kind of work, viz., the proportionality of mental activity to time, and the increase of average deviation with the quality as well as the quantity of work done. Prolonged mental activity results in fatigue or exhaustion. The author summarizes experimental literature on the physiological and psychological effects of intellectual fatigue.

Both normal and pathological fatigue are considered. There are considerable individual differences in the manifestations of fatigue, so that it is possible to establish quantitative work-types depending on the nature of the work and the aptitude of the individual. Studies in the psychology of work and fatigue are destined to play an important rôle in the scientific organization of industrial society.

C. M. DISERENS (Cincinnati)

581. DUPUIS, L., La memoire des noms propres et la fonction du r'eel. *J. de Psychol.*, 1921, **18**, 481–486.

Professor Janet's researches have established the existence of a hierarchy of mental operations, the highest members constituting what he calls the "function of reality." This function is characterized by perception of, and action upon, actual things, accompanied by a sense of reality. It involves more energy than any other mental operation. In this paper, the connection of the function of reality with a good memory for proper names is discussed and established. The difficulty most people have in recalling proper names, even when memory is otherwise excellent, is well known, but inexplicable by laboratory tests. It is readily explained in the light of Janet's conception, however. Ordinary observation shows the close connection between a good memory for proper names and capacity for social and political activity. Memory of proper names is an index of outwardly directed interest and energy. Knowledge of proper names is the first step towards commanding their possessors, in short to the direction of Men and things—the control of reality.

C. M. DISERENS (Cincinnati)

## 7. SOCIAL FUNCTIONS OF THE INDIVIDUAL

582. LALO, C., L'Art et la vie. *J. de Psychol.*, 1921, **18**, 408–417.

The relation of art to life is more complex than most æstheticians admit, when they try to define the former in terms of a single function. In reality, art has five distinct rôles which are often mutually incompatible. A recognition of the multiple function of art is indispensable to psychological æsthetics, as well as to adequate criticism. For each function there is a corresponding normal type of expression, as well as a pathological development. The five principal rôles of art in life are: (1) Diversion or play; finding its normal expression in the art of Flaubert, and the schools of Kent

and Spencer, while its pathological deviations are mytho-mania and dissociation. (2) Purgation or catharsis; illustrated by the work of Goethe, the æsthetic theories of Aristotle and the psycho-analysts, dreams, obsessions and nostalgias. (3) Technique or the artistic imperative; typified by the Goncourts, the school of art for art's sake, artistic mysticism and morbid dilettanteism. (4) Idealization; associated with Rousseau's art, the doctrines of the Platonists, and megalomania. (5) Reinforcement; in which Stendhal, the æsthetics of Taine and Guyan, and automatism illustrate the three forms of functional expression. The conception of the multiple function of art is of value in directing the appreciation of the individual, explaining public preferences, extending the range of criticism, and analyzing ethico-æsthetic situations. As a sociological conclusion, it must be remembered that the functions of art are not entirely specific, other activities such as the dream or religious life subserving the same ends, a fact which suggests the need of a complimentary science of sociological æsthetics.

C. M. Diserens (Cincinnati)

583. Mauss, M., L'expression obligatoire des sentiments (Rituels oraux funéraires australiens). *J. de Psychol.*, 1921, **18**, 425–434.

Not only are tears very often an obligatory social usage among primitives, but all kinds of oral expressions of the sentiments are, in essence, social rather than physiological or psychological phenomena. This fact appears upon a consideration of the oral funeral rites, of Australian tribes. The cries and songs involved in these rites are always collective. The time and conditions for the expression of sentiment, as well as the agents, are selected by the group. Specific proofs of the purely obligatory nature of sentimental expression, whether of chagrin, anger or fear are: (1) Such expression is not common to all the relatives, but is confined to specific classes of female relations—mothers, sisters, and the widow of the defunct, as determined by the system of group parentage. (2) There is a conventional number of cries. (3) Finally the nature and content of the emotional expressions indicate their social character. Lamentations are always musical to a certain extent, consisting of rhythmic songs, which may be the rudiments of primitive drama. Moreover such expressions have a fixed magical function, viz., exorcism. The songs are limited to insults and curses directed against the hostile magicians, and a denial of group

responsibility. The collective character of sentiments reinforce their intensity in the individual, while the group expression constitutes a symbolism or language, intelligible to all and required by society.

C. M. DISERENS (Cincinnati)

584. CHANDLER, A. R., The Æsthetic Categories. *Monist*, 1921, 31, 409–419.

Although some try to reduce all æsthetic excellence to beauty, it is better to recognize coördinate categories. The sublime, tragic and comic are usually included, and even then much of the æsthetic realm remains outside. Literary usage multiplies the categories beyond control. Rejecting the literary method, it is possible to define æsthetic categories in terms of their relation to human instincts, as classified by McDougall. With the addition of one new category, viz., interest, we have a list which can be related to the principal instincts, with the possibility of subdivision within a given category according to the number and nature of the instincts involved. Thus we have: (1) Formal or sensory-perceptual beauty, which is unrelated to any instinct. (2) Formal beauty, enriched by sexual charm. (3) Formal beauty, enriched by parental instinct. (4) Formal beauty, conditioned by self-abasement. (5) The sublime, involving self-assertion or fear with or without a formal element. (6) The tragic; a dramatic form of the sublime into which pugnacity enters. (7) The comic, connected with fear, and self-assertion with or without a negative formal element (deformity). (8) The interesting; conditioned by sympathy and curiosity.

Of these categories, certain ones have opposites of a positive character, which are also related to basic instincts. The ugly involves sensory perceptual resistance, alone, or conditioned by disgust or antipathy; while dullness, the antithesis of the interesting, in its incapacity to stimulate any particular instinct, produces fatigue. Such an analysis is chiefly of value in demonstrating the intimate connection between æsthetic experience and life.

C. M. DISERENS (Cincinnati)

585. WAUGH, W. T., The Causes of the War in Current Tradition. *Brit. J. of Psychol.*, 1920, 11, 159–163.

The question "Why did the German Government provoke war in 1914" was propounded to fifteen- and sixteen-year-old boys and girls, candidates for admission to a teachers' training college.

Their answers may be regarded as products of oral tradition, and an analysis of them may reveal what passes current in popular thought. For the most part the ideas regarding the causes of the war were found to be vague and distorted.

H. D. KITSON (Indiana)

586. WATTS, F., The Outlook for Vocational Psychology. *Brit. J. of Psychol.*, 1921, 11, 194–205.

The tests at present available for determining vocational aptitude are defective in being too purely intellective and in calling forth too stereotyped forms of response. There is great need for forms of tests that will evoke interested responses, instinctive forms of behavior, and more original kinds of reasoning. One that might fill this need is an "optional question" test, consisting of a series of questions involving in their answers "(I) a routine operation such as counting figures, or making a list of common articles, (II) the accurate comprehension of instructions with the ability to follow them, and (III) the tackling of a problem of a more difficult kind." "Subjects have almost invariably been found to choose the *questions which interest them most.*" "We can get a shrewd idea, through the . . . neglected questions, of the kind of thing he systematically avoids."

H. D. KITSON (Indiana)

587. GAULT, R. H., The Standpoint of Social Psychology. *J. of Abnormal Psychol.*, 1921, 16, 41–46.

The social psychologist is concerned with socio-psychic phenomena. His field does not embrace all socio-psychic phenomena, only the conscious, but in these, the unconscious mechanisms of the human personality are involved. It is not necessary to postulate a "social" mind. We only need to consider the overlapping of individual experience. The article reveals nothing new.

R. S. HUNT (Harvard)

588. ROGERS, A. K., Principles in Ethics. II. *Philos. Rev.*, 1921, 30, 24–40.

"My general conclusion is, then, that because the more positive and individualistic claims of the good are dependent upon desire, which varies widely, and innocently, in various men, it is in the peculiarly moralistic field, constituted by those restraining elements of human nature which issue in the judgment of the moral ought,

that most of the constitutive principles of ethics capable of general application have to be looked for." One may illustrate how such principles may be of guidance in the conduct of life. When I choose my life career I must take into consideration my interest, must choose one in which my capacities are given scope: but I must "use whatever career I do adopt in a way not to stir up my own capacity for intellectual disapproval." To avoid such disapproval my ideal must have "something to offer as a contribution to the permanent structure of reality."

"Principles" are however only preliminary to the final work of the moral judgment. This judgment is an act individual and unique. Ethics as a science deals with the ethical judgments of the past. But new moral truths come out of new situations. A man meets with a situation in which he cannot at once tell just what is his duty. Using all his knowledge he wrestles with the situation and suddenly, "he knows not how," the "light breaks upon him." "And a new moral truth differs from an intellectual one only by reason of the part that feeling, or value, plays in the solution." One cannot meet such new ethical situations with ready-made rules. One cannot for instance say that lying is wrong and make such a virtue an ultimate principle in ethics. A virtue is a generalization rather than a principle. And one cannot generalize to all situations for new ones are constantly arising. But in the choice of a life career one can consider what is desirable in itself, and good. Here we are not dependent upon a certain set of circumstances as we are in particular cases of conduct. "The primary question of systematic ethics is, then, not, Is this particular act right? but, What kind of life is a good and desirable life?"

I. G. CAMPBELL (Wells College)

589. STOOPS, J. D., The Instinct of Workmanship and the Will to Work. *Internat. J. of Ethics*, 1921, 31, 183–199.

Will was formerly conceived as a spiritual entity independent of our instincts, emotions, sentiments. Psychology has shown us that such a conception is an abstraction. The energies of the will are to be found in the instinctive patterns of mind. "When the mind meets the facts of experience with a drive or pattern which gives these facts a certain form there is a creative, organizing, thrusting forward of the will which is accompanied by a consciousness of power." Unless these patterns are given some outlet they set up a tendency toward mental and moral disorganization. Such

disorganization is at present being brought about through the repression of the instincts of workmanship and of possession. Our vocational and industrial world must be reorganized on these as a basis. "Workmanship and the sense of property are as deeply rooted in our constitution as hunger, fear or sex." For some time we have recognized that the instinct of curiosity is at the basis of our desire for knowledge, that sex is the basis of the family, that "empathy" is the source of religion: but only now are we recognizing that there are instincts which underlie the processes of work, of industry, of vocation. It is now becoming clear that "the evolution of industry is just as vitally related to the nature of personality as the evolution of the home, the school and the church."

I. G. CAMPBELL (Wells College)

590. NOBLE, E., The Objective Element in Æsthetics. *Philos. Rev.*, 1921, 30, 271–281.

In this abstract I shall not give Mr. Noble's arguments for the position that there is an objective element in æsthetics but shall confine myself to his observations on the æsthetic consciousness.

If all things were alike we should not have consciousness, for the shock which we call feeling comes about because of difference. On the other hand, if all things were totally different we should have no knowledge. For knowledge requires segregation into classes. "The discovery of likeness at the very heart of difference is the real source of the æsthetic satisfactions." In decorative art iteration is necessary but so too is variety. "It is the orderly union of likeness and unlikeness which makes the square more beautiful than the straight line, the circle or sphere more beautiful than the square. . . . It is in circles, spirals and curved lines generally that we obtain the utmost maximum of the likeness which makes for ease of cognition, with the utmost minimum of the difference which is needed for the appeal to consciousness." In symmetries of design we see the elements of likeness and of difference and the cognition of such a scheme is easier than is that of one where symmetry is lacking. In symmetrical designs "the mind returns, if in slightly varied ways, to the elements it has already perceived; it is saved the effort to readjust itself to something totally new, and is at the same time challenged by something different woven into the texture of the old."

In structures of nature we see the same thing. "Organs most fitted to their work, such as secure the highest degree of efficiency

and economy for maintainance, show curved, iterated, symmetrical or otherwise self-assimilated forms, and therefore excite more or less pleasure in the beholder." So too in the field of movements. All movements produced rhythmically are beautiful. "Not only do assimilated movements avoid the waste of effort involved by unassimilated activities—a waste due to separate mental determinations, as well as to separate neuro-muscular adjustments: they economize the effort put forth in contemplation, since like elements that recur spare the need of changing adaptations to its object by the mind." Some may think that the pleasure excited by natural scenery speaks against the above interpretation. But this is not true. "For within and beneath all the objective multiplicity and complexity of the landscape there are rich iterations, harmonious repetitions, large symmetries that, appealing to all the senses at once, endlessly emphasize and recruit each other. . . ."

"The beauty of the organized rhythm which we call music . . . is also largely a result of the complication of the law of assimilation with the law of consciousness. Melody is undoubtedly indispensable to music, yet music begins in the simplest regular-interval sounds; melody—variation in pitch and time—is added to relieve the monotony of the one-note, equal-spaced sounds, account being taken of the fact that the same impression continually iterated finally ceases to be noticed; it is therefore a contrivance for refreshing the consciousness with the shock of sensations continually varied. . . . The most pleasurable effects of musical sounds are due to that mingling of the superficially unlike with the fundamentally like which enables the mind to recognize uniformity beneath variety and symmetry within difference."

Æsthetic pleasure arises out of "likeness complicated with but dominating difference. There is a beginning of this pleasure in cognition itself—in perceiving that objects separated in space, despite superficial differences, are fundamentally like each other; it is more or less distinctly felt in the case of things re-seen or old experiences renewed; it takes more intense form in the creative production of likes, as in the artistic imitations of sculpture, painting, the drama and literature."

I. G. Campbell (Wells College)

591. Lowie, R. H., A Note on Æsthetics. *Amer. Anthropol.*, 1921, 23, 170–174.

This paper is a record of an attempt to apply Fechner's methods of æsthetics in a comparative study of Indian decorative art. The

decoration of parfleches consisting of simple geometrical figures, affords an opportunity of applying Fechner's third method, viz., noting objectively what forms predominated in actual use. Such inquiries have an ethnographic no less than a psychological interest. Certain differences in the æsthetic canons of different regions may be reasonably expected, and if found constitute an additional differentia of culture. In the present experiments, Crow and Shoshoni parfleches were compared as regards a single figure, viz., a rectangle in the center of the decorative area. Tabular measurements of 11 specimens, of which 6 were Shoshoni and 5 Crow, show a consistent "preference of the Crow for relatively wide rectangles in the central position. On the basis of the figures, the Shoshoni norm would fall somewhat above, and the Crow norm somewhat below Fechner's ideal rectangle. Such comparisons should be extended to other Indian decorative forms. It will be as important to discover practical unity of æsthetic reaction to geometrical forms, as to determine tribal differences."

C. M. Diserens (Cincinnati)

592. Belot, G., Esquisse d'une Généalogie des categories esthétiques. *J. de Psychol.*, 1921, 18, 495–511.

Starting from a suggestion of Bergson's that the difficulty in defining the sense of beauty is due to the assumption that the beauties of nature precede those of art, the author sketches a theory in which the current view is reversed. Art as a productive faculty in the most general sense of the word, is the root of the æsthetic function, and of the idea of beauty. Contrary to Ruskin and his followers, a long evolution of art was necessary before nature could vie with the artificial in producing æsthetic satisfaction. Inspiration was not regarded as æsthetically superior to technical ability, until a comparatively late stage of artistic evolution. Moreover, contrary to Kant and Ruskin, the productive is anterior to the contemplative or critical faculty. Technique precedes taste. Finally traditional æsthetics treated beauty as a fixed primary datum, vainly seeking a satisfactory conceptual definition. Beauty however is the effect of a certain productive function operating according to laws inherent in its nature. This theory explains artistic origins which are characterized by divergence from nature. It is also superior to conceptual theories in explaining the evolution of the æsthetic function; since it offers a dynamic standard. The conception of beauty varies from age to age. If the æsthetic

faculty is essentially an artificial and creative function, the law of art will of necessity change continually, and a static conceptual standard of beauty must be replaced by a dynamic principle. This view also establishes a distinction between the evolution of the æsthetic function, and that of religious, moral and scientific functions. The latter are continuous and conservative, the former tends towards discontinuity and novelty. Art is essentially autonomous. Upon these principles, it is possible to trace the genealogy of the æsthetic categories, which are simply the different movements and aspects of artistic creation, connected by a specific dialectic of a synthetic nature. The point of departure is a primary antithesis between man and nature. Man and his creations present order, intelligibility, interest; inviting imitation. Nature is at once the disordered, unintelligible, banal and uninteresting, attracting attention only in certain extraordinary aspects. Artistic creation yields a double pleasure, viz., the delight in production, and the admiration of others. Maintenance of these two forms of pleasure involves a search for novelty, finally resulting in the effort to imitate nature, not through admiration of the latter, but to rival her, to achieve technical conquest. This leads to the conception of nature as a kind of unconscious artist analogous to the human artist, and the recognition of natural beauties. The result may be an attempt to rival nature by technical display or "tours de force," and by the opposite device of Artlessness and apparent spontaneity. The artist reintegrated with nature discovers in himself nature's abundance and spontaneity, recognizes the inadequacy of his means, and arrives at the concept of the sublime. At this point art touches religion. The infinitude and mystery of things evoke an art of symbolism, in which classic technique gives place to a suggestive indetermination.

Man as a physical and psycho-social being is the privileged object of Art; hence aesthetic and moral functions frequently collaborate in the creation of a superior social type, or moral beauty. This coöperation is mistaken for coincidence. The creation of Man by Man which Art achieves may take many directions, moral or otherwise. Art may create moral humanity, but the natural Man with all his imperfections idealized is also aesthetically interesting, like every other artistic imitation of reality.

C. M. Diserens (Cincinnati)

## 8. SPECIAL MENTAL CONDITIONS

593. LIVET, L., Les rêves narcotique et leur conséquences. *J. de Psychol.*, 1921, 18, 389–407.

The study of narcotic dreams shows the constant appearance of morbid mental disturbances after the subsidence of the oniric period. Similar conditions also follow normal dreams, but the post-narcotic phenomena are distinguished by their quality, frequency, abundance, and intensity. The search for pleasure derived from narcotics is common to every race, although geographical, ethnic and religious considerations have determined for each people some preferred toxic agent. Owing to their mysterious effects the use of narcotics has always been associated with magical and religious rites. Religion has controlled their use, and profited by the hallucinations and states of credulity which they produced. The most common characteristic agents are: alcohol, opium, hemp and its varieites, including hashish, gandia and maraguana, cocaine, and henbane with other related plants (consolantes). The author gives an historical account of their varieties, employment, and the mental disturbances produced. Their use results in hypersensitivity of the imagination, disturbances of the special senses and of bodily feeling, and visceral troubles. The usual post-narcotic phenomena are: (1) illusions, (2) sensory hallucinations, (3)cœnesthetic disturbances and hallucinations of general sensibility, (4) fixed ideas and false convictions. Each of these effects is analyzed along with valuable historical indications. Within these general forms of post-narcotic disturbances there is a large variety of specific types depending on the constitutional tendencies of individuals who use the drugs. The five principal types of psychopathic constitution appear, viz., cyclothimic, paranoiac, mythomanic, emotive and pervert, though the types are nearly always associated in a great variety of combinations. Post-narcotic disturbances like the narcotic dreams that precede them, center about the dominant idea of the individual, who in this way attains an apparent realization of his purposes. The study of the psychopathological effects of narcotics supplements the investigations of normal dreams, and illuminates obscure problems of mythology and ancient religion.

C. M. DISERENS (Cincinnati)

594. Moll, A., Akkultismus und Psychologie. *Zeit. f. Psychotherapie u. Med. Psychol.*, 1920, 8, 1–34.

The writer first states that psychology should be limited to the scientific sense. The task of that science is not to explain the presence of spirits, but to register, analyze, compare and arrange systematically the contents of consciousness already known. It endeavors to bring the phenomena of occultism back to known causes. In time of war occultism appeals strongly to people. Three forms of superstition play an important part in this war: the belief in amulets to protect the wearers; prophecy concerning the destinies of soldiers; prophecies concerning the outcome of the war. This is found in all countries. (Specific instances in France and England.) Similar trend was found in early reactionary periods. Occultism is favored further because of doubts as to the future of culture and civilization. Just as a religion is a safety anchor for some, so spiritualism is for others. Psychology has enriched our knowledge concerning trances. (Specific instances.) It is not necessarily supernatural since some aspects are clearly explained, so we may expect that all could be so explained. Automatic writing, painting, dancing and so forth puzzle the psychologist. Some persons of mediocre ability in a normal state of mind show wonderful and alert characteristics in this hypnotic state. It is difficult to determine between truth and fiction in these cases. The fact that in a trance people are capable of abnormal perception may be due to their sharpened senses and perceptions and freedom from inhibitions. Telepathy is an especially popular subject at present. Investigation usually shows a trick method. Ofttimes the person unintentionally gives the mind-reader a clue to his thoughts by his expression and actions. Many mysterious happenings are merely sleight-of-hand tricks. The trouble is, people go to séances and such things expecting to see mysterious acts and so do not watch closely enough. Audiences should be more sceptical and critical. With the coming of peace and a settled state of government it is hoped that the normal healthy mind of the German people will return, and they will see occultism in its true light.

R. H. Sylvester (Drake)

595. Tischer, R., Zur Theorie der Telepathie und des Hellschens. *Zeit. f. Psychotherapie u. Med. Psychol.*, 1920, 8, 85–92.

Telepathy and hellschens, the one having to do with two minds, the other with one, are probably essentially alike and are to be

studied together. The writer with Dr. von Wasieleuski in 1912–13 conducted an investigation under this title. Forel had reported results of his studies, but his conclusions were not convincing. It seems possible that word and sentence can be sent from one brain to another just as any one impulse can be sent from a nerve cell to another. This is the basis of what seems to be the most plausible explanation. Another theory holds that electrons passing from one brain to another carry the message. The third has to do with a theory of psychical energy. Telepathy was investigated in its most common forms. As a part of the study of hellschens, the writer witnessed an experiment which he could not understand, in which the experimenter could tell what was written on postcards bundled into a large package. If an experiment could be conducted with those born blind and deaf, definite results could probably be reached. The writer finally gives up reconciliation of the various theories and the proving of any, and closes the article with the questions—Are we right in trying to make the soul and material things affect each other? Should we expect to be able to explain mental phenomena in terms of the physical?

R. H. Sylvester (Drake)

## 9. NERVOUS AND MENTAL DISORDERS

596. Klieneberger, O., Zur Frage der Homosexualität. *Arch f. Psychiat.*, 1921, 63, 129–148.

This contribution discusses the nature of homosexuality as an inherent and integral part of the personality or as something resulting from the special experiences of an unstable make-up. The general opinion is that homosexuality like other abnormal sexual reactions is not an independent or isolated departure from normality but that it is regularly associated with other disturbances or at least with such characteristics as make the perversion only a symptom of a psychopathic degeneration. The point is made that the homosexual himself has a special motive for making out his own abnormality as an inherent one and that his own account of its genesis must be discounted accordingly. Masturbation may furnish the starting point for homosexuality in stimulating the interests for a body similar to one's own, thus one of the same sex. Similarly early sexual dreams are necessarily homosexual. Cases where the factor of criminality enters are not suitable material for a study of

the problem. Two cases are reported, the second of particular interest. Strong objection is raised to the fatalistic attitude toward homosexuality as an inherent trait which so easily buries more deeply in his perversion the individual that might otherwise be helped.

F. L. WELLS (Harvard)

597. SCHULTZ, J. H., Ueber psychologische Leistungsprüfungen an Nervösen Kriegsteilnehmern. *Zeit. f. d. ges. Neurol. u. Psychiat.*, 1921, 63, 326–364.

For the purpose of organizing a simple test to measure mental ability in formal functions and make comparisons possible, memory experiments were made with two thousand neurotic convalescents in 1916–18. After a preliminary test with similar though less difficult material the main test was given consisting of nonsense syllables, significant heterogenous words, and the counting of e's in a nonsense text. The material was repeated and rehearsed ten times with distractions during intervals and then asked for after twenty-four hours. Observation of seven figures was found to be more difficult than of four nonsense syllables. A single exposition of ten nonsense syllables entirely obscures group differences while a repeated use of the same material gives good differences. No relation appeared between the pathological grouping of material and the memory span. The influence of content for memory is lessened in depressions. The subjective weakness of memory in constitutional neurasthenics and fright neurosis is traceable to attention and concentration disturbance. The individual psychology of convalescence is well observed through such measures as these. In gassed cases the recovery in *Merkfähigkeit* is relatively slower than that of other memory functions. Repeated tests are especially fitted for the observation of "pseudo-neurasthenic" states.

O. GROSKLAUS (Radcliffe)

598. KRAEPELIN, E., Ueber Entwurtzelung. *Zeit. f. d. ges. Neur. u. Psychiat.*, 1921, 63, 1–8.

Kraepelin discusses in a very general way the psychic disturbances arising from sudden breaking up of accustomed mental environment. Family ties are the most important in this respect. The "only child" difficulty is mentioned. Proper social contacts are not established. City life tends more than rural to deleterious

loosening of family ties. Family ties are also looser in the lower social classes. Attention is called to the especially strong family ties among the Jews. Comparable to the "uprooting" of family ties is that of national ones. The German people is, unfortunately, susceptible to these. Language ties are particularly important. "I consider it very probable that the regrettable incapacity of the German educated youth for clear and penetrating thought arises largely from the early admixture of foreign languages, especially Latin. . . . The flooding of our idiom with words and expressions which do not belong to our mother tongue is partly a consequence of our exaggerated admiration for the foreign, a species of spiritual *Entwurtzelung*. . . ." The psychoanalysts have always laid stress on the breaking up of family "complexes" as a necessary feature of personal evolution. Kraepelin here presents the other side of the shield. It is but briefly conceded that "a certain degree of *Entwurtzelung* is a necessary condition of all development." The article is thus not less interesting between the lines than within them.

F. L. Wells (Harvard)

599. Boven, W., Caractere individuel et alienation mentale. *J. de Psychol.*, 1921, 18, 242–252.

The science of character although still imperfect may be profitably applied in the study of madness. Individual character is an index to predisposition to insanity. Certain character traits, notably those tending toward misanthropy and unsociability, constitute what may be called the ethological complex of dementia præcox, a permanent trend which marks the future victim of the malady. Other groups of traits mark just as definitely the predisposition to manic depressive insanity. In short, certain individuals are stamped with the marks of future psychoses.

The character of the individual determines the variety of his disturbance. Fundamental complexes of traits determine general psychoses, *e.g.*, schizophrenia, while other character traits act as secondary determinants, yielding a large number of combinations which account for specific varieties of madness. To the heterogeneity of individual characters corresponds the heterogeneity of deliria. To classify individual characters is to aid in the classification of psychoses. The characters of immediate ancestors must also be considered in connection with the ethology of the individual, since the ravages of dementia præcox or of manic

depressive insanity are directly proportional to the extent of schizophrenic or manic depressive impregnation in the preceding generation. The characters of ancestors reveal the probable psychoses of their descendants. The author traces the genesis of dementia præcox and manic depressive insanity to acquired mental and social traits which become transmissible by heredity upon attaining a sufficient intensity.

C. M. DISERENS (Cincinnati)

600. COURBON, P., La Réticence. *J. de Psychol.*, 1921, 18, 252–264.

The definition, types, artifices and indices of reticence are discussed, and distinguished from other varieties of pathological silence. Reticence, in the psychiatric sense, is the voluntary silence of a madman concerning the whole or part of his delirium. The presence of volition marks it off from emotional retention and conceptual insufficiency, while the limitation of silence to the matter of the delirium separates it from mutism, or absolute silence. Two general types of reticence exist; viz.: (1) Defensive reticence, with the object of concealment. (2) Expansive reticence, with the object of communication. Defensive reticence is either critical or insane, both divisible into sub-types. In the former the critical sense remains in part and reticence is dictated by moral or psychological reasons, or by a spirit of resignation. In the latter, reticence may center about distrust, superstition, shame, love of mystery, hallucinations, or defective metabolism. The artifices used to maintain silence are: denial, delay, alternative explanations, doubt or interrogation, mental restrictions, simulation of some other delirium, and anger. The indices of reticence are in general terms: (1) Inadaptation of language and mimicry to circumstances. (2) Defects of motor, graphic and verbal control. The persistence of reticence depends upon the mental power of the patient, and the persuasiveness of the physician, who must secure the complete confidence of the former in order to effect a cure.

C. M. DISERENS (Cincinnati)

601. HESNARD, A., La Folie, pensée organique. *J. de. Psychol.*, 1921, 18, 229–241.

Forms of insanity are not mental maladies but abnormal psychic productions of organic origin, the ultimate causes being humoral troubles which result in intoxications or infections. General disease, in the ascending stage, produces alterations in organic function,

and in some cases transient cerebral and mental effects. In the descending stage, the disease produces abnormal psychic tendencies, *i.e.*, tendencies contrary to the biological purpose of the individual. These tendencies are just as fundamental as normal tendencies but are relatively unadaptive and unharmonious. In periods of organic crisis, climacteric periods, etc., they assume paroxismal forms, attaining consciousness in the form of psychoses by means of a symbolism which conveys a sense of reality. Since the psychosis develops without reference to reality it remains on a primitive level of thought. The motives are everywhere monotonous and uniform. The development of the psychoses does not exhibit degeneration or regression but a neo-generation or biopsychic anarchy. The author summarizes his views in a table in which the phases of the psychosis—invasion, development, systematization, and reduction—are characterized with reference to organic origin, the unconscious and conscious levels, and clinical description.

C. M. Diserens (Cincinnati)

602. Wallon, H., Psychonéuroses et Troubles d'origine sympathique. *J. de Psychol.*, 1921, **18**, 419–423.

This paper is an analysis of a clinical case of a special type of psycho-neurosis, in which the reactions depend upon the sympathetic nervous system. A relative independence appears to exist between the sympathetic fields of the two halves of the body, thus explaining the unilaterality of certain epileptic auras, and disturbances described by Fere in his Pathology of the Emotions. A counter-proof of the rôle of the sympathetic is furnished by endocrinal disturbances. The pathology of the functions of the sympathetic system is still obscure and a careful study of the relations of the latter to mental states may be of great aid in the classification and explanation of neuropathic disturbances.

C. M. Diserens (Cincinnati)

603. Head, H., *Disorders of Symbolic Thinking. Brit. J. of Psychol.*, 1921, **11**, 179–193.

"(I) A unilateral lesion of the brain, affecting the use of language, disturbs a number of psychical processes, which cannot be grouped under such headings as 'speech' 'reading,' 'writing,' 'motor' or 'sensory' activities, or any other *a priori* categories.

"(II) I have ventured to apply to them the term 'symbolic thinking and expression,' because they consist mainly of the use of symbols in language and in thought; but it is symbols used in a particular manner which are affected, and not all symbolic representations. This term is in no sense a definition, for this group of functions cannot be comprised within any single general conception; they can be determined solely by experimental observation.

"(III) The various manifestations of aphasia and allied disorders of speech cannot be explained by destruction of sensory images. These may remain intact, although they cannot be used voluntarily as part of the symbolic mechanism of language.

"(IV) These researches show that the two aspects of meaning inherent in the use of symbols may be separated by suitable lesions of the brain. Want of perfect recognition of verbal significance leads to a defective power of naming; whilst what I have called 'sematic defects' produce a loss of the general meaning of words, phrases, numbers and pictures."

H. D. KITSON (Indiana)

604. GODDARD, H. H., The Subnormal Versus the Abnormal. *J. of Abnormal Psychol.*, 1921, 16, 47–55.

Goddard gives statistics which clearly indicate the falsity of a definition of feeblemindedness based solely on mental age. He then defines feeblemindedness as the lack of ability to get along in the world, manage one's own affairs with ordinary prudence and compete with one's normal fellows, together with a consideration of mental age. He defines the moron as one of that group of feebleminded with a mentality ranging from eight to twelve years and the psychopath as the individual of a low mentality resulting from mental disease, not mental arrest. Under the category of subnormal he would include the feebleminded and such others as have a mentality below whatever age might be agreed upon as the lower limit of normality, *i.e.*, the group that has not developed to the required level. He stresses the idea that quantitative study of mind must be followed by qualitative analysis, qualitative study of mental functioning, determination of degree of abnormality and significance as found in different mental processes, and concludes with the definition of the subnormal mind as a mind of incomplete structure contrasted with the abnormal mind as a mind of imperfect function. His final emphasis is on the necessity of examination for functional peculiarities before any classification into groups.

O. GROSKLAUS (Radcliffe)

605. Bumke, O., Ueber unbewusstes psychisches Geschehen. *Zeit. f. d. ges. Neur. u. Psychiat.*, 1921, **66**, 343–346.

A partial rejoinder in a discussion with Bleuler arising in the columns of the same journal.

F. L. Wells (Boston Psychopathic Hospital)

606. Hoffman, R. A. E., Grundlinien der Normalen und Anormalen seelischen Konstitution. *Zeit. f. d. ges. Neur. u. Psychiat.*, 1921, **66**, 128–137.

An elaborate but somewhat abstract contribution to characterology. Though verging on schematism, the detail is ingenious.

F. L. Wells (Boston Psychopathic Hospital)

607. Reed, R., Some Notes on the Stammering Problem. *J. of Abnormal Psychol. and Soc. Psychol.*, 1921, **16**, 161–167.

The problem of stammering from the psychoanalytic point of view. The author stresses the idea that stammering is not a true speech defect, but very definitely a neurosis. He does not believe that psychoanalysis has solved the problem of stammering, but feels that the method is of value in its study. He criticizes very severely most of the modern "foolish and futile theories of stammering therapy." He insists that many methods of treatment fail in that they intensify the stammerer's consciousness of his defect and increase his anxiety (a most pertinent criticism). He explains (very briefly) his point of attack with his own patients.

The article will be of especial interest to persons working with stammerers of the purely psychopathic type.

A. M. Jones (Pennsylvania)

## 10. INDIVIDUAL, RACIAL AND SOCIAL PSYCHOLOGY

608. Bevis, W. M., Psychological Traits of the Southern Negro with Observations as to Some of his Psychoses. *Amer. J. of Psychiat.*, 1921, **1**, 69–78.

That the negro evidences certain psychic racial traits in his most common psychoses has been found from a study of the cases in five Southern state hospitals. Racially, he was removed from Africa before he was biologically ready, and had citizenship thrust upon him equally too soon, imitation of the white man being his only resort. Mixture of the white blood has affected the longevity of the race; has lowered the power of resistance and hence has

brought about a mental and moral deterioration. The children of the race begin to show a slowing up of mental development about puberty. The following adjectives are typical: care-free; lives in the present, with little depression; lacks initiative; suspicious of his own people; full of mysticism and superstitions. With fortunate guidance many are saved from making a physical and mental wreck of their lives. Suicidal tendencies are rare. Alcoholic psychoses and cerebro-spinal syphilis show surprisingly low figures. Manic depressive occurs in higher per cent. than that given by Green in 1916 (17 per cent.), manic phase most common. Dementia præcox heads the lists, catatonic form occurring 2 to 1, paranoid next in importance. The mechanistic classification of psychoses shows that nearly all are psychoses of dissociation, compensation, or repression.

S. ALLEN (Boston Psychopathic Hospital)

609. WOODBURY, E. M., Causes for Military Desertion: A Study in Criminal Motives. *J. of Crim. Law and Crim.*, 1921, 12, 213–222.

Modern criminal science has thus far completely neglected the field of analytical study of criminal motives. The most important reason for this is that there are no existent civilian crime records of any use to any one attempting such a study. In a civilian court, records of the charge and verdict only are kept and nothing of the testimony, necessary for a study of motif, is recorded. An army court martial keeps a stenographic report in full of the proceedings and from 6,811 records of general courts-martial this article is taken.

Charts show in detail the number of cases of each kind due to 14 main groups of causes such as drink or drug addiction, mental deficiency or weakness, discipline, etc., and the proportional number of cases ascribed to such cause out of 1,000 unselected, to be used in determining the relative frequency with which the most numerous might be expected to appear. Briefly it showed that drink or drug addiction caused the majority of cases of absence without leave but very few desertions, in the ratio of over 3 to 1. In contrast, mental deficiency or weakness was the cause of nearly 2½ times as many desertions as absence without leave. Discipline was the cause of 1⅝ absences without leave to one desertion. Character defect was the cause of one absence without leave to 1½ desertions. Dissatisfaction with environment and homesick-

ness led to over twice as many absences as desertions. To these six causes were ascribed 60 per cent. of the desertions, 80 per cent. of the absences without leave.

In summing up the causes of desertion and making recommendations, the author showed that a complete mental, moral and physical examination at the enlistment bureau and constant supervision and attention on the part of the commander to those factors affecting the morale of those under his charge would have a powerful influence in reducing the number of cases of this sort, at least in removing to a great extent the internal causes. The external causes of the difference between civil and military pay, general social unrest, etc., might be affected somewhat by the education of civilians to the viewpoint that desertion, absence without leave, etc., are truly criminal, an attitude heretofore only mildly operative, if at all. The article clearly shows the advisability of remedying the existing defect of our criminal record system, that a more efficient attack may be made at the base of the problem,—the cause.

J. P. Currie (Boston Psychopathic Hospital)

610. Stone, C. P., A Comparative Study of 399 Inmates of the Indiana Reformatory and 653 Men of the United States Army. *J. of Crim. Law and Crim.*, 1921, **12**, 238–258.

Prevalent divergence in opinion regarding the amount of defective intelligence in groups of adult male inmates of prisons and reformatories, results from the lack of accurate standards of comparison relating to the intelligence of unselected non-delinquent adults of society. Army psychological tests showed that the mental age of the average adult is from one to two years lower than presupposed. The 9- and 10-year levels recommended by psychologists for detecting individuals whose intelligence corresponds to the lowest .5 per cent. to 1 per cent. of the general population, are shown by army data to be so high as to cut off a far greater percentage. Too high current standards denoting intelligence have led to an overestimation of the number of defectives in reformatories and prisons. The average mental age of 299 whites and 100 negroes in the Indiana Reformatory compare with the average mental age of 653 unselected draft men as follows: Army 13.4 years, Ref. (whites) 12.65, Ref. (colored) 11.016. Percentage of cases whose mental age falls below 9 and 10 years: below 9—Army 4.1 per cent., Ref. (whites) 3.03 per cent., Ref. (colored) 6 per cent.; below 10—Army 13.6 per cent., Ref. (whites) 9.03 per cent., Ref.

(colored) 28.0 per cent. In the reformatory group, crimes against property far exceed those against person or public order. As compared with the negroes, whites committed fewer against person but more against property and order.

R. S. HUNT (Harvard)

611. HARDING, J. R., The Segregable Delinquent. *J. of Crim. Law and Crim.*, 1921, **12**, 267–274.

Certain feebleminded criminals, inveterate trouble-makers in the community and in institutions are known as "defective delinquents." As infants, such delinquents are "dull and distracted." Impatient under discipline at school, they early become chronic truants. Incorrigible in the ungraded class and truant school, when they reach the reformatory they are "quarrelsome, rebellious, deceitful and psychopathic." Defective delinquents are "dwarfed or deformed physically and handicapped by the presence of chronic disease." Intellectually they grade as feebleminded. Their emotional faculties are "stunted, perverted and poverty-stricken" and their moral sense is either lacking or of the very lowest order. The home environment has usually been one of poverty and ignorance, surrounded with bad influences. As a result the defective delinquent becomes a perverted individual only partially responsible for his acts. Three cases known to the author are discussed in detail,—one of the rebellious type, one of the psychopathic type, and a sex pervert. In conclusion it is stated that the confirmed criminal defective should be committed to a special institution rather than sent to prison. As "all morons are potential criminals," and it is the neglected defective that becomes a criminal, preventive measures should begin with the education of society in which defective delinquents develop.

R. W. WASHBURN (Boston Psychopathic Hospital)

612. THEODORIDIS, C., Sexuelles Fühlen und Werten. Ein Beitrag zur Völkerpsychologie. *Arch. f. d. ges. Psychol.*, 1920, **40**, 1–88.

The importance of sexual experience in the development of ideas of morality and social customs is coming to be more fully recognized. In fact, the libido is the only valid point of reference for those mores common to nearly all tribes and peoples. The psychology of the matter is to be sought for in certain psychic dispositions which the sexual act has left in man. A feeling of

power and superiority and a desire for possession and permanent ownership is accompanied in man by the conviction that the woman has been defiled and made impure. These factors have been fundamental in determining the course of social evolution: the former has brought about patriarchism in its various manifestations, and the latter has been responsible for the restrictions, under the guise of protection against defilement, imposed upon women and the widespread prevalence of double standards of morality. Today among cultured peoples greater freedom is granted to woman, and in some cases, formal equality with man before the law. Masculine chivalry, proceeding from a feeling of sympathy for woman in the lowly state in which man himself has kept her, tries to make amends. But in actual practice her position is not greatly improved. Patriarchism persists as the most sacred of social traditions against which no insidious sentimentality must be allowed to prevail.

C. C. PRATT (Clark)

613. SCHERRER, E., Das Problem der anschaulichen Gestaltung in der Lyrik. *Arch. f. d. ges. Psychol.*, 1920, **40**, 147–192.

The opinion is not uncommon that in lyric verse the determining factor for the arousal of æsthetic effects is in wealth of visualization. An inspection of the best lyrics, however, reveals the fact that poets rarely resort to words and phrases which would tend to bring before the mind's eye such clear forms and outlines as the painter and sculptor seek to represent. Observations of lovers of poetry, too, indicate that visual imagery plays but a minor rôle in their æsthetic enjoyment. Whence come, then, the solid sensory palpability and extraordinary plasticity so characteristic of poetry? The melodic rhythm of internal speech is the most pregnant factor in securing to poetry its palpable form. In transposition of words, various forms of metre, subtle shifts of accent, length of stanzas, repetitions, alliteration, onomatopœia, and the like, the poet finds a grateful source from which to fashion the meaning of his colorful pictures in other than visual terms. The unique plasticity of these pictures derives from the wide attributive variations of the verbal sounds themselves: their big diffuseness or tight compactness, their bluntness or sharpness, brightness or dullness, the heaviness or lightness of the vowel sounds, and the extent and fine gradations of their pitch differences. The integration of kinæsthesis with these attributes often serves to enhance the plastic effect of lyrics.

C. C. PRATT (Clark)

614. ALLPORT, F. H. and ALLPORT, G. W., Personality Traits: Their Classification and Measurement. *J. of Abnormal Psychol.*, 1921, 16, 6–40.

As differences of personality are of a qualitative rather than a quantitative sort and difficult to measure, the author's aim is personality study and description rather than personality testing. Problems arising from the interaction of personalities are social problems, and personality measurements aim at readjustments, beneficial both to society and the individual. An effort has been made to consider only "those fundamental and pervasive tendencies which constitute the main currents of human personality" rather than superficial traits, such as tactfulness, which can be referred to more fundamental traits. A tentative outline of such tendencies falls into four main divisions; first, intelligence, which determines the quality and success of an individual's general adjustments; second, temperament, as judged by emotional breadth and emotional strength; third, self-expression or strength, terms which are used to include such traits as extro-version or intro-version, ascendance or submission, expansion or seclusion, compensation, insight and self-evaluation; fourth, sociality, comprising social participation, self-seeking, and susceptibility to social stimuli. Possibly the above traits "form the needed basis of sociability, habit formation and character." When traits are rated or, if possible, tested, they can be plotted in graphical form, giving a refined impression of the individual which facilitates intelligent treatment.

R. W. WASHBURN (Boston Psychopathic Hospital)

615. STOOPS, J. D., The Will and the Instinct of Sex. *Internat. J. of Ethics*, 1921, 32, 40–51.

The organic life, under the control of the autonomic nervous system, is more deeply rooted than the special senses. Save hunger the instinct of sex has the most powerful drive of all organic processes. In the plant and animal world the object of the processes of sex is the perpetuation of life. But we of today have lost the immediate unity with the life of the race and have substituted an "absolute inner life of thought" into which "the racial tides of sex come as an irrational intrusion." We have made each individual person an end in himself. "In this way there has arisen a dualism between the sex life of the race and the volition of the individual." The normal expression of any instinct in its appropriate object is accompanied by pleasure—but the pleasure is not

the legitimate object of the will. But by analysis we can make the pleasure the end and "It is this hedonistic treatment of the instinct of sex which is the chief cause of the consciousness of shame." But nature is not remade by arbitrary personal philosophies and where "the object of the will conflicts with the objective end of instinct there necessarily results a condition of chronic nervous and mental strain. . . . By being divorced from the will the sex instinct is made the nucleus of a powerful emotional complex. A system of emotionally toned ideas is built up around the suppressed instinct. A double-mindedness develops." Even a second personality may grow up.

If the instinctive action-patterns are the ultimate sources of the will then we cannot successfully set the will against these patterns. These deeper instinct patterns of the race must be considered as a part of the individual. "The introspective individual must enlarge its conception of itself; the drives of sex and parenthood must be regarded as entering into the very basis of the will, and the objective of the family must save the will from the process of introversion." The ascetic ideal has done much to diabolize both the instinct of sex and the institution of the family. The drive of sex must be moralized. "It will be a new day in ethics when the feverish, detached self discovers that thought has not been achieved by evolution for the purpose of combating the powerful drives and social objectives of the pre-reflective life." Will, to be effective, must have something of the power and immediacy of instinct and emotion. A chronically inhibited will cannot be an effective will. "We must reëducate ourselves out of this dissociation of personality, this dualism of sex and volition." "The ends of individual volition apart from the ends of the race are blind alleys. The sex instinct, like all instincts, has its unity of pattern and volition can find a durable end only within the instinctive pattern which nature provides."

I. G. Campbell (Wells College)

616. Kroeber, A. L., Observations on the Anthropology of Hawaii. *Amer. Anthropol.*, 1921, 23, 129–137.

The student of racial and psychological anthropology will find many interesting problems in Hawaii, together with very favorable conditions for their solution. The people form a highly specialized race with Negroid and Mongoloid affinities. The Polynesian temperament is difficult to formulate, the current conception requiring

revision. Their psychic life is more complex than that of the American Indian, though whether this is congenital or the effect of complex culture is problematical. The practical absence of racial prejudice offers unparalleled opportunities for the application of mental tests, and a careful investigation in comparative psychology would more readily yield dependable results than almost anywhere else. An unusual opportunity for comparative racial and social studies is also afforded by the hospital for the insane at Honolulu and Dr. Kroeber presents some interesting statistics on insanity in the various races represented in the institution. The ratio of the number of the commited insane of the principal nationalities, to the number expectable on a populational basis, is less than unity for Japanese, North Europeans, and Filipinos; greater than unity for Hawaiians, Chinese, Portuguese, Porto Ricans, and Koreans in the order named. Ratios range from .55 for Japanese to 5.50 for Koreans. Interesting notes on Hawaiian phonetics are also presented.

C. M. Diserens (Cincinnati)

## 11 MENTAL DEVELOPMENT IN MAN

617. Almack, J. C. and Almack, J. S., Gifted Pupils in the High School. *Sch. and Soc.*, Sept. 24, 1921, 14, 227–228.

Fifty-one pupils, 23 boys and 28 girls, ranging from 11 to 20 years of age, were selected for this study. They all scored over 110 in army Alpha, over 135 in the Otis test, and had I.Q.'s of 110 or over in the Stanford-Binet test. Fifteen were found to be retarded, twenty normal and sixteen accelerated in school work. Since the Stanford test lacks an adequate upper range, it was used only to serve as a check on the group tests. The correlation between Alpha and Otis tests was .765 for the boys; .695 for the girls. In almost all cases, unusual ability had been observed as early as 3 to 5 years. The medians on school grades were 90–94 per cent., with no grades below 85–89 per cent. Conduct, as rated by the teachers, was good. The girls were largely interested in English; the boys in mathematics. The girls had "no decided vocational aims," the boys had selected professional or technical careers. These students were found to be superior physically, and in no sense "queer, pathological or erratic." Their homes "rank high racially, economically, intellectually and socially." This study brings out that students of this type "present the largest element

in the problem of retardation," and that "there is need of educational reorganization adapted to meet the needs of the individual."

F. I. GAW (Boston Psychopathic Hospital)

618. PRESSEY, S. L., A Comparison of a Girls' Reform School, Attendants at a State Hospital for the Insane, and Public School Children, by means of Certain Tests of Intelligence. *J. of Crim. Law and Crim.*, 1921, 12, 258–266.

The writer's hope in publishing this paper is that further impetus may be given to careful analytical studies of the results given by various tests with various types of cases. He believes that in much of the present work investigators have been dominated too much by the desire to find only a generalized total, and so have disregarded a fund of rich data. The comparisons given below are for the most part with the median mental ages of thirteen-year-old public-school children. The writer found that 88 per cent. of the public-school children from fifteen to seventeen years old, 31 per cent. of the girls from the Reform School, and 45 per cent. of the hospital attendants gave scores above the thirteen-year norm on a group scale of intelligence. The distance between the highest and lowest scores on an individual test was taken as a measure of irregularity. Excessive irregularity was found among the girls from the Reform School, and a very marked irregularity among the hospital attendants. Therefore the writer concludes that the composition of the examination yielded by the last two groups is different from that yielded by the standard group of public-school children. Analysis by tests shows striking differences between groups. Regarding the abilities of special groups, conclusions should not be drawn which are based on the results obtained from scales measuring "general intelligence," unless analysis of the scales has shown their composition to be analogous to that of an approved standard scale. The results set forth are quite like other results the writer has found, so there seems to be no reason for questioning the general trend of the findings.

I. M. MACLEISH (Boston Psychopathic Hospital)

619. DAVIS, H., Army Alpha and Students' Grades, Illustrating the Value of the Regression Equation. *Sch. and Soc.*, 1921, 14, 223–227.

From Stanford University comes a report of an experiment to determine the value of the Alpha intelligence test as a means of

predicting the type of work which students would do. In the first quarter of 1920–21, the test was given to a history class of 94 and results gave a correlation of .32 with the average grade of 9 examinations in history for that quarter, and of .43 with the total grades. On the basis of the Alpha score, by means of regression equation, each individual's estimated grade was computed. Comparison of the estimated grade so computed with the actual grade received, showed both failures to measure up to expectation and also a surpassing of expectation. In computing the average deviation from the estimated grade of those who made a grade more than one step below estimation, it was found that a large per cent. were Freshmen and that the deviation was much greater for the first quarter than for the second, which suggested that other measures than class grades should be used before dismissing a Freshman. The average deviation from estimated grade of those more than one step higher than estimation is practically the same for both the first and second quarters. Assuming, then, a deviation of one step or less not to be serious, we might estimate correctly the grade acquired by 56 per cent. of a class.

Granting that a higher correlation would give a better basis for prediction, that intelligence tests in themselves are subject to limitations, and that grades which may be faulty are given by this method equal weight with tests, there yet remains considerable value in a method of this type in locating students who could be led to attempt more, in crediting traits other than intelligence, in serving the same purpose as grades now do but more impartially and quickly, and in many cases perhaps, leading to a better selection of courses and wiser choice of vocation.

G. L. LOWDEN (Boston Psychopathic Hospital)

620. RÉVÉSZ, G., Prüfung der Musikalität. *Zeits. f. Psychol.*, 1920, 85, 163–209.

In an attempt to discover what are the more significant factors in musical ability, the author devised various tests which he tried on school children, adults, musical, and unmusical. The tests covered sense of homophonic and melodic rhythms, absolute pitch, octave transpositions, recognition of intervals, analysis of intervals and triads, grasping and repeating of melodies, and playing by ear. As was to be expected, children studying music totaled highest in these tests,—not, however, because of their musical practice and training, but because of inherent musical ability. This conclusion

is supported by the fact that certain children who had had no opportunity for musical study did far better in the tests than some adults who had enjoyed musical training for many years. The results showed no marked differences due to age or sex. A study of the correlation between the various musical capacities tested indicated that playing by ear, grasping and repeating melodies, analysis of triads, and sense of melodic rhythm are intimately related to general musical ability. Certain of the other tests may be performed by unmusical subjects as well as or better than by musicians.

C. C. PRATT (Clark)

621. COLLAR, D. J., A Statistical Survey of Arithmetical Ability. *Brit. J. of Psychol.*, 1920, **11**, 135–158.

In the effort to secure further light upon the unsettled question as to whether "arithmetical ability" exists, five classes (200 individuals) in a boys' school, corresponding with Standards 3 to 7 were examined with simple problems and tests. Results lead the writer to conclude that arithmetical ability tends to be represented in two main subdivisions: (1) the power to compute with ease and readiness; (2) the power to do arithmetical work which involves the application of higher forms of mental activity than are required for (1).

Is success in one form of arithmetic symptomatic of success in all? To answer this question, measures were obtained of work in non-arithmetical subjects and were correlated with the measures of arithmetical work. Lower correlations were found than those existing between various measures of computative operations. "Hence we are impelled to interpret this relationship as evidence distinctly in favor of Burt's suggestion that there is an essential unity in arithmetical ability."

H. D. KITSON (Indiana)

622. PRESSEY, S. L., A Group Scale for Investigating the Emotions. *J. of Abnormal Psychol.*, 1921, **16**, 55–64.

There is a growing realization that intellectual capacity, while playing a large part, is far from being the solely important factor for consideration in dealing with the various classes of life. Statistics gleaned from work among all classes, from delinquents to college students, support this view. Other character traits such as persistence and interest are of extreme importance if we would aim

at the root of the matter. Toward this evil Dr. Pressey has now developed a group scale for investigating the emotions, to a large extent the determinants of character. These tests carry farther than any other the possibilities of the group test in two ways; the condensation of material and problem, and in the saving of time and labor. Each word and detail of arrangement is so carefully chosen and arranged as to make it a separate question, so that in all 600 are condensed into the space of both sides of a 9 ft. x 12 ft. sheet. Abnormal states (hypochondriacal, melancholic, paranoid, etc.) are clearly brought out without suspicion thereof on the part of the subject, yet quickly apparent to the examiner. The test may be given by an untrained examiner, requiring no technique, may be accomplished in less than 30 minutes by the average adult and corrected by any clerk in about three minutes. "Total scores of an entire examination are the blurred result of a number of factors and hence are of relatively little importance. Here, however, it is possible from the mass of data yielded by the examination to combine certain items in such a way as to obtain from the single examination highly differentiated information with reference to a number of problems, thus opening up a field for investigation more readily than a test organized for any one specific purpose."

J. P. CURRIE (Boston Psychopathic Hospital)

623. PIAGET, J., Essai sur quelques aspects du developpment de la notion de partie chez l'enfant. *J. de Psychol.*, 1921, **18**, 449–480.

This paper is a record and discussion of experiments bearing on the notion of "part" in young children. Four tests modeled on those of Burt (*J. of Exp. Psychol. and Ped.*, 1919, **5**, 73) were applied to a number of children ranging from six to fourteen years of age. The reasoning of the subjects show that the notion of "part" is ill-defined and confused. Three successive stages of confusion in response appear, viz., implicit, explicit, and distracted. The last is probably connected with a residue of logical incomprehension. The development and complex nature of the notion of "part" is traced in connection with the evolution of fractions in the child's mind. The conception of "half" presents difficulties and stages of logical confusion analogous to those involved in the notion of part. At first "half" simply means an incomplete object synonymous with "part." In the next stage a numerical form is assumed, but the relation to the whole is not grasped. Only in

the third stage is "half" thought of as relative to a whole. The author goes on to the problem of the logical incomprehension of partitives and the evolution of the genitive, which he says is based upon the notion of "part." The analysis of different senses of the genitive progresses pari passu with the development of the partitive. The author explains the fact that children may speak of the part, without a notion of the whole by verbal realism which transforms the intersections of classes of objects into identity or complete separation. In brief, the incomprehension of the partitive is a complex problem involving: (1) Factors of a logical order, including slow evolution of the notion of "part," original confusion with the possessive and attributive, interference of classes, absence of sense of relativity in use of term, and use of the part as a symbol of the whole. (2) Extralogical factors; acts of inattention and verbal incomprehension. Between these two groups of factors there is constant parallelism and reciprocal action, in which logical form expands the field of attention, while the latter elaborates new logical forms.

C. M. Diserens (Cincinnati)

## 12. MENTAL EVOLUTION

624. Melrose, J. A., The Structure of Animal Learning. *Psychol. Rev.*, 1921, **28**, 189–221.

The author discusses types of learning. Following are the topics: (I) Lower Animal Learning (*a*) Organic fixation (*b*) Organic spacial adaptation (*c*) Organic choice; (II) Higher Animal Learning (*d*) Organic association (*e*) Organic conception (*f*) Organic judgment.

P. T. Young (Illinois)

625. Coleman, W. M., The Psychological Significance of Bodily Rhythms. *J. of Comp. Psychol.*, 1921, **1**, 213–220.

The paper reports the results of thirty, of 4,000, tests of the effects of emotion on animal behavior, and is motivated by a desire that behaviorism, in its study of the learning process, not make the fatal mistake of neglecting a study of will and emotion. The tests, for the most part, consisted in countings, by stop-watch, of steps, pulse-beats, and movements of breathing and chewing, to ascertain the presence of rhythms, the synchronousness of different

rhythms, etc. In brief, these results were obtained: Both voluntary and involuntary muscular activities tend to be periodic and rhythmical and the rhythms of the several activities tend to be in accord. Rhythms are terminated by haste, great desire, and excitement. Attention to periodic sensory stimuli effects rhythms in bodily activities and at the same rate. A disturbed state, of self-consciousness, results from a discord of rhythms and prevents a restoration of harmonious rates. The heart acts as both time-keeper and pace-maker. Different states of emotion are induced by rhythm and the lack of rhythm; fatigue is postponed or initiated respectively by rhythm or arhythm; and altered cardiac tension is connected with rhythm and the lack of it.

The therapeutic value that these results may have, as to fatigue, heart disease, and the emotions, is quite evident and adds interest to an already interesting series of tests and results.

H. R. CROSLAND (Oregon)

626. DRZEWINA, A. and BOHN, G., La Défense des Animaux Groupés vis-à-vis des Agents Nocifs. *Comp. Ren. Acad. Sci.*, 1921, **172**, 779–781.

Experiments indicate that larvæ of *Rana fusca* in weak colloidal solutions of silver emit a protective substance that enables large groups to survive when small groups die.

J. E. DECAMP (Penn State)

627. RABAUD, E., L'Instinct Maternel chez les mammiféres. *J. de Psychol.*, 1921, **18**, 487–495.

No general explanation of the maternal instinct seems possible at present, since it is difficult to reduce the parental behavior of such diverse forms as spider, bird and mammal to a common basis. The doctrine that parents derive advantage from care given to offspring can not be maintained in all cases. The author's observations of behavior in mice lead him to conclude that the maternal instinct is dependent upon modification of physiological states under the influence of the female sex glands. Maternal behavior towards young animals of the species or even of relatively distant species, appears in the course of pregnancy, increasing as gestation approaches. The presence of the young seems to arouse a kind of physico-chemical reflex, which may be explained in terms of the internal secretions of the sexual glands. Observations of other animals show that the attraction towards the young does not even

imply a state of gestation, but is a physiological condition periodically renewed in the female. This explanation does not imply consciousness and excludes anthropomorphism. In man the basis of the maternal instinct is in essence the same, but its exercise is complicated by conscious prevision and social influences.

C. M. DISERENS (Cincinnati)

628. GILMAN, E., A Dog's Diary. *J. of Comp. Psychol.*, 1921, 1, 309–315.

Written from the point of view of the dog which has been and is being trained by Miss Gilman, for the Hopkins laboratory, this diary cleverly enumerates the tricks which the dog can perform and cannot perform and gives the dates of trials and the age of the animal in various stages of practice and accomplishment. The net result of the training was the fact that the dog learned many clever tricks, that he learned these by responding to the changes in the inflection of the trainer's voice,—that he could not associate words with objects but, by the inflection of the trainer's voice, he learned to associate words with acts. The diary is of interest because of the growing literature concerning conditioned reflexes, the hunger motive, and the effects of kindness to animals.

H. R. CROSLAND (Oregon)

629. CRAIG, W., Why Do Animals Fight? *Internat. J. of Ethics* 1921, 31, 264–279.

It is a fact that every animal fights his own kind. Why does he do this? To answer this question we must watch an animal very closely and this Mr. Craig has done, especially the Columbidae. "But I have studied other birds and mammals sufficiently to be sure that the statements made in this paper have a wide and general application among them." In this paper two theses are defended: (1) Fundamentally, among animals, fighting is not sought nor valued for its own sake; it is resorted to rather as an unwelcome necessity, a means of defending the agent's interests; (2) Even when an animal does fight, he aims, not to destroy the enemy, but only to get rid of his presence and his interference.

An animal fights to gain or retain possession of that which is of value to him, such as food, mate or nest. Animals fight when their interests conflict. Animals do not enjoy fighting for its own sake. An animal neither seeks a fight nor seeks to prolong it. Fighting is a means of getting rid of an annoying stimulus. It is only

indulged in when some other instinct is thwarted. When an animal is kept without enemies "he never manifests the least appetance for them." This is not true when he is deprived of other objects such as water, food, mate or nest. Why then do animals fight as much as they do? There are several conditions under which they do so. They do so when they are kept in too close quarters. In the natural state animals have a certain distance which they keep. For example, "birds 'space out' their nests with . . . regularity, the distance varying with the species. . . . The interesting facts about these myriad cases of spacing-out is that nearly all of them . . . are adjusted without fighting." Sometimes however when there seems to be plenty of room animals fight. Why? "The adjustment of conflicting interests requires intelligent coöperation and some degree of social organization." But most animals have a low degree of the power of coöperating. For example if a new pigeon cote is set up and two males are allowed to choose compartments for themselves they may live very peaceably side by side provided they happen to choose adjoining compartments. If however they happen to choose the same apartment fighting ensues. Could they arbitrate—or if their keeper would arbitrate for them—there would be no fighting. "The amount of quarreling among animals varies (other conditions being equal) with the degree of their stupidity."

As to the destruction of the enemy, Mr. Craig finds this only in the parasites, such as the European cuckoo or in some species of ants, bees and wasps. If one observes the behavior of an animal when he has conquered his rival he will see that there is no tendency to destroy or injure. If the re-agent (the one being fought) flees, the animal does not pursue him indefinitely and seek to destroy him. "On the contrary, he pursues him only far enough to eliminate him from the field of interest about which the battle is being fought." Moreover all birds and mammals are "endowed with instincts to threaten the enemy" and these are always used before fighting takes place. "If the aim were to destroy the enemy he would be attacked silently and by stealth . . . but . . . he is first warned, and given every opportunity to withdraw from the field." If one animal submits during a fight the other ceases the attack. In this Mr. Craig sees "not merely the absence of an impulse to destroy. The bird has a positive impulse to quit fighting a non-resisting bird of his kind." When during a fight neither of the combatants will flee or submit, a grim struggle ensues and there is

an endeavor to injure. But if at any time one of the combatants cries "Enough" and leaves the field in possession of the victor—he is not further injured.

Mr. Craig gives some very suggestive and enlightening comments on the bearing of his experimental observations upon human problems—especially those of war—and upon philosophy.

I. G. CAMPBELL (Wells College)

# NOTES AND NEWS

PROFESSOR HENRI BEAUNIS of Mercy and Paris has died at the age of ninety-one years.

AT the thirty-first meeting of the Ohio Academy of Science, held March 25 and 26, 1921, at the Western Reserve University and Case School of Applied Science, Cleveland, Ohio, the following psychologists read papers: Dr. H. H. Goddard, Dr. Garry C. Myers, Dr. Herman H. Young, Miss Florence Fitzgerald, Dr. A. P. Weiss, Miss Helen Marshall, Dr. Carl Murchison, Dr. E. B. Skaggs, Dr. F. C. Dockeray and Dr. H. Austin Aikins.

AT the Ohio State University, Dr. F. C. Wagenhals, of the Medical College, will temporarily take charge of some of the courses previously given by Dr. J. W. Bridges, who has resigned to accept a position at the University of Toronto.

DR. HARRY D. KITSON, professor of psychology at Indiana University, has just returned from Europe where he conferred with investigators in industrial psychology in England, France, Germany and Switzerland.

MR. R. H. THOULESS, M.A., Fellow of Corpus Christi College, Cambridge, has been appointed lecturer in psychology in the University of Manchester.

AT the State University of Iowa, three or four part time assistantships with stipends ranging from $50 to $80 per month, are available for graduate students of particular scientific promise in the fields of child psychology and anthropometry. The student devotes three hours daily to the work of the Child Welfare Research Station and in addition is permitted to carry a graduate program of eleven hours per week, leading toward the Ph.D. degree in Child Psychology. Applications and recommendations should be sent to Prof. Bird T. Baldwin, Director.

AT a meeting of the New York State Association of Consulting Psychologists held in New York City on September 24th, Professor Wm. McDougall was the guest of honor and Professors Cattell and Thorndike spoke. Dr. M. F. Washburn has been elected honorary president.

AT the University of North Carolina, Dr. H. W. Crane has been appointed associate professor of psychology.